



STIC Search Report

EIC 1700

STIC Database Tracking Number: 168959

TO: Camie Thompson

Location: REM 10D28

Art Unit : 1774

October 25, 2005

Case Serial Number: 10/727642

From: Usha Shrestha

Location: EIC 1700

REMSEN 4B28

Phone: 571/272-3519

usha.shrestha@uspto.gov

Search Notes



STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher or contact:*

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- I am an examiner in Workgroup: Example: 1713
➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Cornie Thompson Examiner #: 79244 Date: 10/14/05
 Art Unit: 1774 Phone Number 301-272-1530 Serial Number: 10727, 642
 Mail Box and Bldg/Room Location: 10D28 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Molecular Chemical compounds w/ structures

Inventors (please provide full names): Michael Redecker

Earliest Priority Filing Date: 7/29/03

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please do a search on claims 1-20 and all
formulas.

Thanks

SCIENTIFIC REFERENCE BR
Sci & Tech Inf - Cnt
OCT 19 2005
Pat. & T.M. Office

STAFF USE ONLY

Searcher: WJH
 Searcher Phone #: _____
 Searcher Location: _____
 Date Searcher Picked Up: 10/25/05
 Date Completed: 10/25/05
 Searcher Prep & Review Time: 60
 Clerical Prep Time: 30
 Online Time: 240

Type of Search

NA Sequence (#) _____
 AA Sequence (#) _____
 Structure (#) 1 _____
 Bibliographic _____
 Litigation _____
 Fulltext _____
 Patent Family _____
 Other _____

Vendors and cost where applicable

STN 1049-81
 Dialog _____
 Questel/Orbit _____
 Dr.Link _____
 Lexis/Nexis _____
 Sequence Systems _____
 WWW/Internet _____
 Other (specify) _____

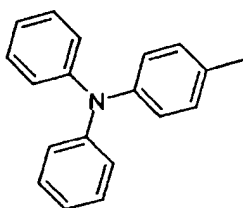
WHAT IS CLAIMED IS:

- 1 1. A chemical compound, comprising:
- 2 an electron donor group;
- 3 an electron acceptor group; and
- 4 a conjugated bridging element, said electron donor group and said electron acceptor
- 5 group linked to each other via said conjugated bridging element,
- 6 wherein said chemical compound has a readily displaceable electron, a dipole
- 7 character is present only in the excited state, and said chemical compound is capable of
- 8 emitting photoluminescent radiation.
- 1 2. The compound according to claim 1, wherein the electron donor group is an
- 2 aromatic amine or a fused cyclic system.
- 1 3. The compound according to claim 1, wherein the electron donor group is
- 2 selected from the group consisting of triphenylamine, phenylenediamine and benzidine.

1 4. The compound according to claim 1, wherein the electron donor group is
2 selected from the group consisting of carbazole, thiophene, and oligomers thereof.

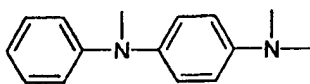
1 5. The compound according to claim 1, wherein the electron donor group is
2 selected from the group consisting of compounds of formulas 1a through 1d, thiophene, and
3 oligomers thereof:

4 [Formula 1a]



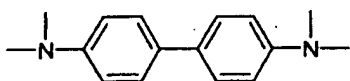
5

6 [Formula 1b]



7

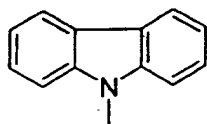
8 [Formula 1c]



9

, and

10 [Formula 1d]



11

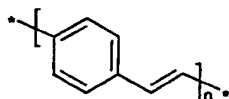
1 6. The compound according to claim 1, wherein the conjugated bridging element
2 has a π -conjugated carbon bond.

1 7. The compound according to claim 6, wherein the π -conjugated carbon bond is
2 included in an organic polymer with a chemical basic structure selected from the group
3 consisting of a phenylenevinylene moiety in the form of a monomer, an oligomer, a polymer
4 and a substituted product thereof, a phenylene moiety in the form of a monomer, an oligomer,
5 a polymer and a substituted product thereof, a fluorene moiety in the form of a monomer, an
6 oligomer, a polymer and a substituted product thereof, a vinylene moiety in the form of a
7 monomer, an oligomer, a polymer and a substituted product thereof, a ethynylene moiety in
8 the form of a monomer, an oligomer, a polymer and a substituted product thereof, an
9 anthranylene moiety in the form of a monomer, an oligomer, a polymer and a substituted

10 product thereof, a naphthylene moiety in the form of a monomer, an oligomer, a polymer and
11 a substituted product thereof.

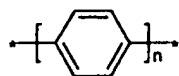
1 8. The compound according to claim 6, wherein the conjugated bridging element
2 is selected from the group consisting of formulas 2a through 2g:

3 [Formula 2a]



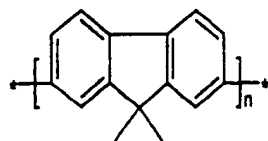
4
5 wherein n is a number ranging from 1 to 20,

6 [Formula 2b]



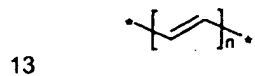
7
8 wherein n is a number ranging from 1 to 20,

9 [Formula 2c]



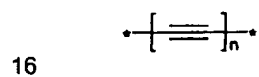
10
11 wherein n is a number ranging from 1 to 20,

12 [Formula 2d]



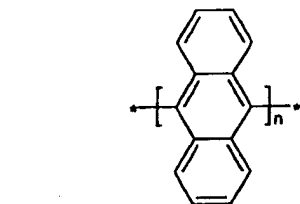
14 wherein n is a number ranging from 1 to 20,

15 [Formula 2e]



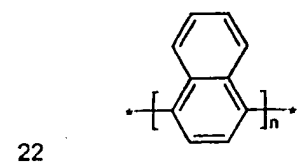
17 wherein n is a number ranging from 1 to 20,

18 [Formula 2f]



20 wherein n is a number ranging from 1 to 20, and

21 [Formula 2g]



23 wherein n is a number ranging from 1 to 20.

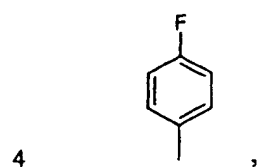
1 9. The compound according to claim 1, wherein the electron acceptor group is

2 selected from the group consisting of monosubstituted phenyl, disubstituted phenyl,
3 trisubstituted phenyl, imide and anhydride of aromatic polycarboxylic acid, oxazole, and a
4 fused cyclic system.

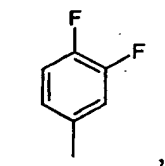
1 10. The compound according to claim 9, wherein the electron acceptor group has
2 a chemical basic structure selected from the group consisting of a fluorine-substituted phenyl
3 group, a nitro-substituted phenyl group, a cyano-substituted phenyl group, imide and
4 anhydride of perylenetetracarboxylic acid and a substituted compound thereof, imide and
5 anhydride of naphthalenetetracarboxylic acid and a substituted compound thereof, oxadiazole
6 and a substituted compound thereof, oxazole and a substituted compound thereof, and a
7 fluorenylidene moiety and a substituted compound thereof.

1 11. The compound according to claim 9, wherein the electron acceptor group is
2 selected from the group consisting of the following compounds of formulas 3a through 3m:

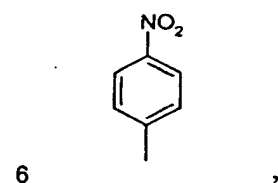
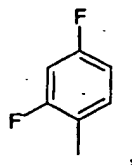
3 [Formula 3a] [Formula 3b] [Formula 3c]



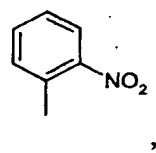
5 [Formula 3d]



[Formula 3e]

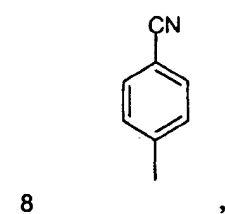


7 [Formula 3f]

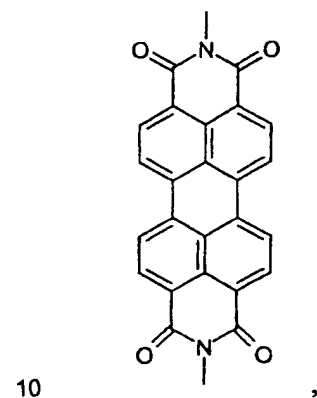
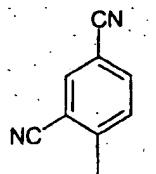
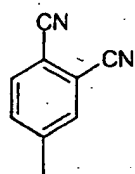


[Formula 3g]

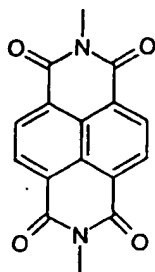
[Formula 3h]



9 [Formula 3i]

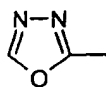


11 [Formula 3j]



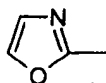
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13 [Formula 3k]



14

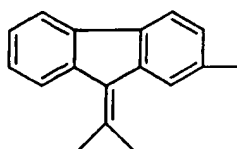
15 [Formula 3l]



16

, and

17 [Formula 3m]

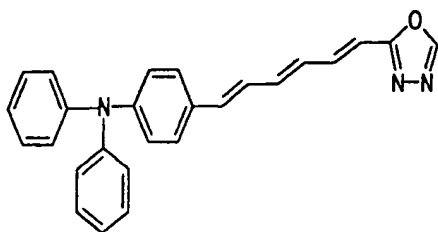


18

1 12. The compound according to claim 1, wherein the compound is selected from

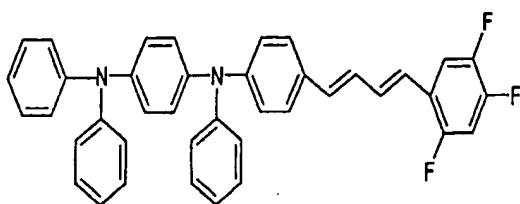
2 the group consisting of the following compounds of formulas 4a through 4c:

3 [Formula 4a]



4

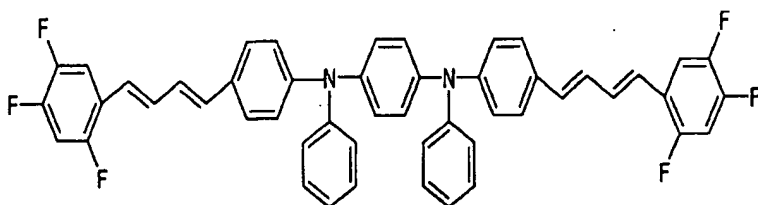
5 [Formula 4b]



6

, and

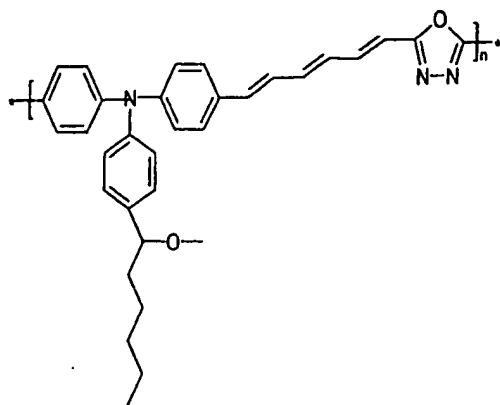
7 [Formula 4c]



1 13. The compound according to claim 1, wherein the compound is selected from

2 the group consisting of the following compounds of formula 5a through 5c:

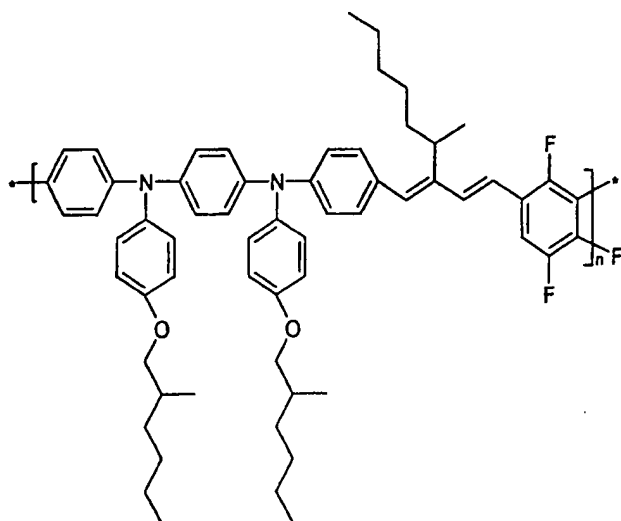
3 [Formula 5a]



4

5 wherein n is a number ranging from 100 to 2,000,

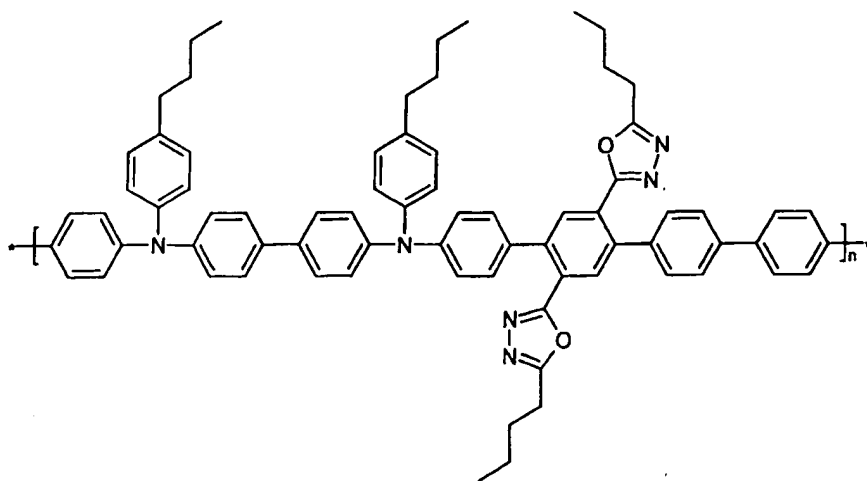
6 [Formula 5b]



7

8 wherein n is a number ranging from 100 to 2,000, and

9 [Formula 5c]



10

11 wherein n is a number ranging from 100 to 2,000.

1 14. The compound according to claim 1, wherein the electron donor group is an
2 aromatic amine or a fused cyclic system, the conjugated bridging element has a π -conjugated
3 carbon bond, and the electron acceptor group is selected from the group consisting of
4 monosubstituted phenyl, disubstituted phenyl, trisubstituted phenyl, imide and anhydride of
5 aromatic polycarboxylic acid, oxazole, and a fused cyclic system.

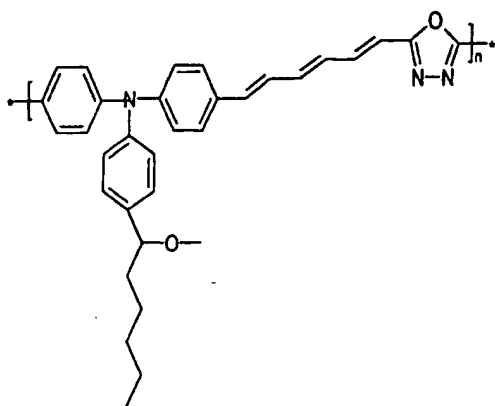
1 15 The compound according to claim 14, wherein said conjugated bridging
2 element is a polymer having a main chain and a branched or side chain having an alkyl group
3 or an alkoxy group.

1 16. A photoluminescence quenching device, comprising the chemical compound
2 of claim 1.

1 17. The photoluminescence quenching device according to claim 16, wherein an
2 required electric field to quench half of photoluminescent radiation emitted without an
3 electric field is less than 1.5×10^8 V/m.

1 18. The photoluminescence quenching device according to claim 16, comprising:
2 a glass substrate;
3 a layer of conductive transparent indium-tin oxide (ITO) on said glass substrate;
4 a layer of poly(ethylenedioxythiophene)/polystyrenesulfonic acid conductive polymer
5 with a layer thickness of from 30 to 100 nm on said layer of conductive transparent
6 indium-tin-oxide;
7 an emitter polymer layer having a thickness of from 50 to 150 nm, said emitter
8 polymer layer having a material selected from the group consisting of the following
9 compounds of formula 5a through 5c:

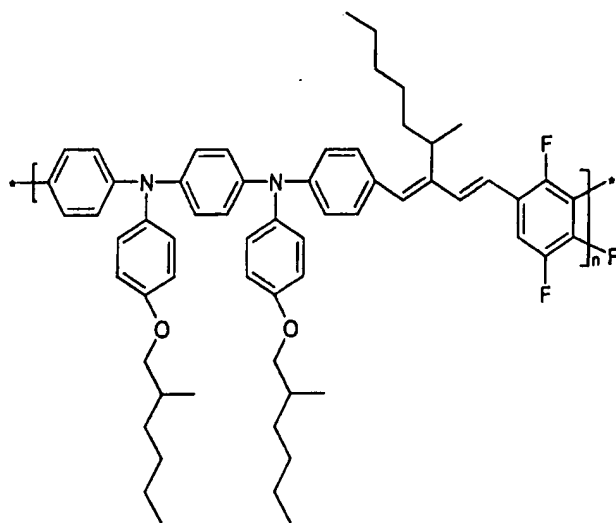
10 [Formula 5a]



11

12 wherein n is a number ranging from 100 to 2,000,

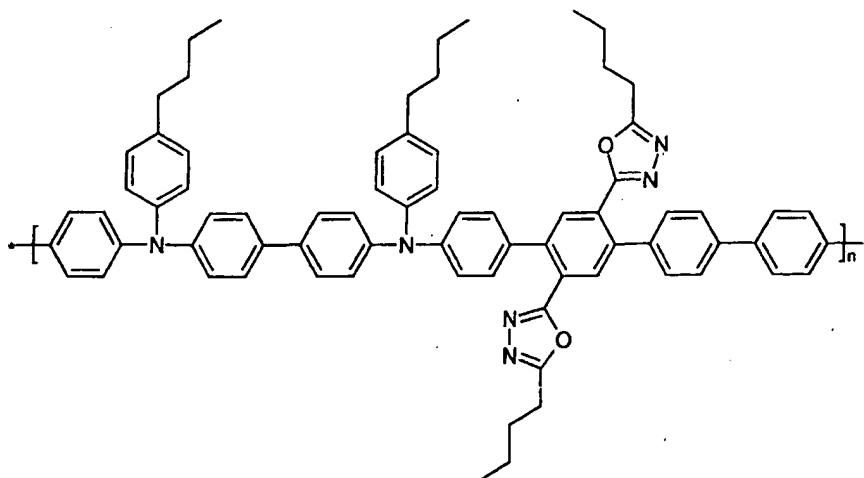
13 [Formula 5b]



14

15 wherein n is a number ranging from 100 to 2,000, and

16 [Formula 5c]



17

18 wherein n is a number ranging from 100 to 2,000;

19 a metal contact; and

20 an aluminum layer with a layer thickness of from 50 to 200 nm.

1 19. The photoluminescence quenching device according to claim 18, further

2 comprising an insulating film between the metal contact and the aluminum layer.

1 20. The photoluminescence quenching device according to claim 18, wherein

2 more than half of photoluminescent radiation is suppressed when applying a voltage of 15

3 volts.

=> fil reg

FILE 'REGISTRY' ENTERED AT 14:11:24 ON 25 OCT 2005

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FILE 'HCAPLUS' ENTERED AT 09:56:08 ON 25 OCT 2005

L1 1 SEA ABB=ON PLU=ON US20040147701/PN
D ALL
SEL RN

FILE 'REGISTRY' ENTERED AT 09:56:35 ON 25 OCT 2005

L2 5 SEA ABB=ON PLU=ON (728915-85-3/BI OR 728915-86-4/BI
OR 728915-87-5/BI OR 728915-89-7/BI OR 728915-91-1/BI)
D SCAN

FILE 'LREGISTRY' ENTERED AT 10:07:54 ON 25 OCT 2005

L3 STR

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L4 STR L3

FILE 'REGISTRY' ENTERED AT 10:13:20 ON 25 OCT 2005

L5 6 SEA SSS SAM L4
D SCAN

FILE 'LREGISTRY' ENTERED AT 10:14:19 ON 25 OCT 2005

L6 STR

FILE 'REGISTRY' ENTERED AT 10:16:00 ON 25 OCT 2005

L7 17 SEA SSS SAM L6
D QUE STAT L7

FILE 'LREGISTRY' ENTERED AT 10:24:11 ON 25 OCT 2005

L8 STR L6

FILE 'REGISTRY' ENTERED AT 12:18:41 ON 25 OCT 2005

L9 7 SEA SSS SAM L8
D SCAN

L10 SCR 1840

L11 7 SEA SSS SAM L8 AND L10

L12 SCR 90 OR 95

L13 3 SEA SSS SAM L8 AND L10 AND L12

D SCAN

D QUE STAT L13

L14 SCR 1609 OR 1607

L15 6 SEA SSS SAM L8 AND L10 AND L14

D SCAN

D QUE STAT L15

L16 SCR 142 OR 140

L17 8 SEA SSS SAM L8 AND L10 AND L14 AND L16

D SCAN

D QUE STAT L17

L18 5588 SEA SSS FUL L8 AND L10 AND L14 AND L16

L19 5 SEA ABB=ON PLU=ON L18 AND L2

SAV L18 THO642/A

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L20 2122 SEA ABB=ON PLU=ON L18

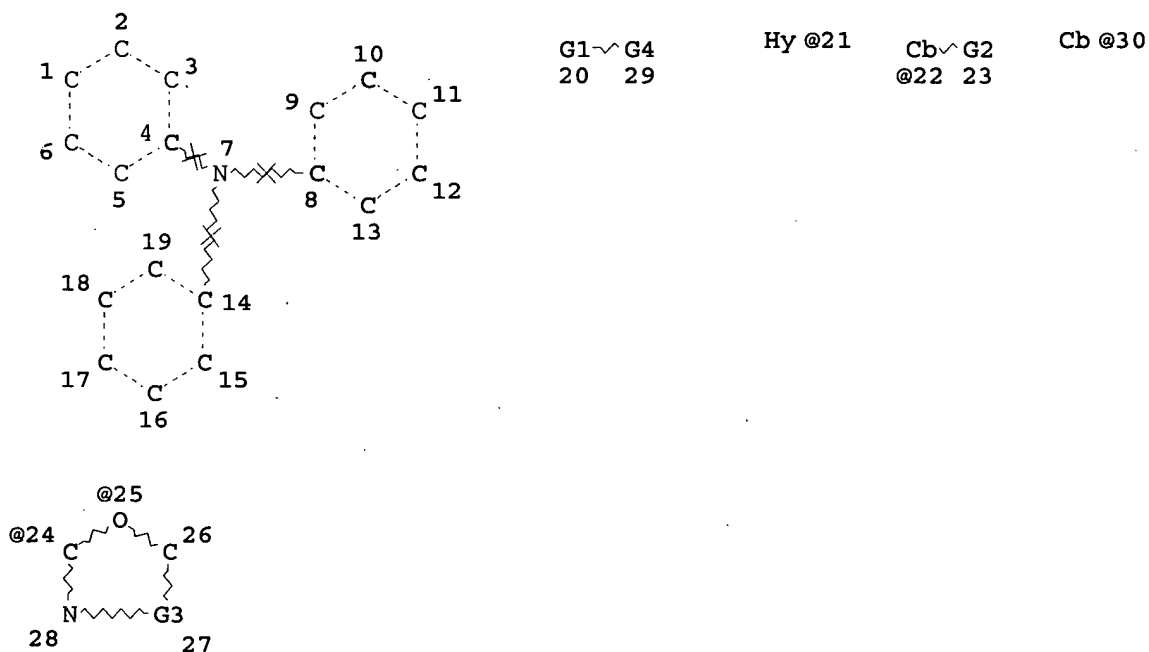
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(ELECTRO OR ORGANO OR ORG#) (2A)LUM!N? OR LIGHT? (2A) (EMI

T? OR EMISSION?) OR PHOTOLUMIN? OR LUMIN? OR EL OR
E(W)L OR L(W)E(W)D OR OLED

L22	683	SEA ABB=ON	PLU=ON	L20 (L) L21
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L24	76	SEA ABB=ON	PLU=ON	L22 AND PHOTO?/SC
L25	72	SEA ABB=ON	PLU=ON	L24 AND DEVICE?
L26	3	SEA ABB=ON	PLU=ON	L24 AND QUENCH?
		D SCAN		
		SEL L25 HIT RN 1-		
L27	58	SEA ABB=ON	PLU=ON	L25 AND P/DT
L28	14	SEA ABB=ON	PLU=ON	L25 NOT L27
L29	8	SEA ABB=ON	PLU=ON	L28 NOT 2004-2005/PY
L30	57	SEA ABB=ON	PLU=ON	L27 AND (1907-2003)/PRY,AY
L31	65	SEA ABB=ON	PLU=ON	L30 OR L29
L32	1	SEA ABB=ON	PLU=ON	L31 AND L1

=> d que stat l31

L8 STR



VAR G1=AK/CB
VAR G2=F/NO2/CN
VAR G3=N/C
VAR G4=21/22/24/25/30
NODE ATTRIBUTES:
NSPEC IS RC AT 7
DEFAULT MLEVEL IS ATOM
GGCAT IS PCY UNS AT 21
GGCAT IS MCY UNS AT 22
GGCAT IS PCY UNS AT 30
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS E2 N AT 21

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L10 SCR 1840
 L14 SCR 1609 OR 1607
 L16 SCR 142 OR 140
 L18 5588 SEA FILE=REGISTRY SSS FUL L8 AND L10 AND L14 AND L16
 L20 2122 SEA FILE=HCAPLUS ABB=ON PLU=ON L18
 L21 366505 SEA FILE=HCAPLUS ABB=ON PLU=ON ELECTROLUM!N? OR
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 OR LIGHT? (2A) (EMIT? OR EMISSION?) OR PHOTOLUM!N? OR
 LUM!N? OR EL OR E(W)L OR L(W)E(W)D OR OLED
 L22 683 SEA FILE=HCAPLUS ABB=ON PLU=ON L20(L) L21
 L24 76 SEA FILE=HCAPLUS ABB=ON PLU=ON L22 AND PHOTO?/SC
 L25 72 SEA FILE=HCAPLUS ABB=ON PLU=ON L24 AND DEVICE?
 L27 58 SEA FILE=HCAPLUS ABB=ON PLU=ON L25 AND P/DT
 L28 14 SEA FILE=HCAPLUS ABB=ON PLU=ON L25 NOT L27
 L29 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L28 NOT 2004-2005/PY
 L30 57 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 AND (1907-2003)/PR
 Y,AY
 L31 65 SEA FILE=HCAPLUS ABB=ON PLU=ON L30 OR L29

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 14:13:14 ON 25 OCT 2005

=> sel l31 hit rn 1-

E402 THROUGH E782 ASSIGNED

=> d l31 1-65 ibib abs fhitr hitind

L31 ANSWER 1 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:673666 HCAPLUS

DOCUMENT NUMBER: 143:163040

TITLE: Triarylamine derivatives and its use as hole
 transport material in organic
 electroluminescent and electrophotographic
 devices

INVENTOR(S): Richter, Andreas; Lischewski, Volker

PATENT ASSIGNEE(S): Sensient Imaging Technologies GmbH, Germany

SOURCE: Ger. Offen., 16 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 102004020046	A1	20050728	DE 2004-102004020046	2004 0421

PRIORITY APPLN. INFO.:

<--
 DE 2003-10361425 IA
 2003
 1222
 <--

OTHER SOURCE(S): MARPAT 143:163040

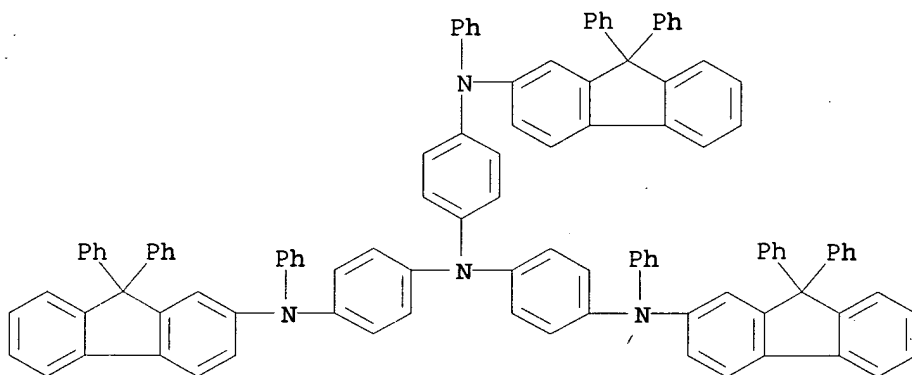
AB The invention relates to new triarylamine derivs., which are so-called starburst mols. and whose application as a hole transport material in electrophotog. and electroluminescent **devices**. The new compds., showing high crystallization temps., are represented by N(-Ar1-N(Ar4)(Ar5))(-Ar2-N(Ar6)(Ar7))(-Ar3-N(Ar8)(Ar9)) [Ar1-3 = C6-20-aryl; Ar4-9 = Ph, biphenyl, methylphenyl, naphthyl, phenanthrenyl, anthracenyl, fluorenyl, triarylmethyl-aryl, triarylsilyl-aryl; at least one of Ar4-9 is triarylmethyl-aryl or triarylsilyl-aryl].

IT 860465-06-1P

(preparation of triarylamine derivs. suitable as as hole transport material for organic **electroluminescent** and electrophotog. **devices**)

RN 860465-06-1 HCAPLUS

CN 1,4-Benzenediamine, N-(9,9-diphenyl-9H-fluoren-2-yl)-N',N'-bis[4-[(9,9-diphenyl-9H-fluoren-2-yl)phenylamino]phenyl]-N-phenyl- (9CI)
(CA INDEX NAME)



IC ICM C07C211-54

ICS C07F007-08; C09K011-06; H01L051-30; G03G005-00

CC 74-3 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)

Section cross-reference(s): 73

ST triarylamine hole transport material org electroluminescent **device** electrophotog photoconductor

IT Electroluminescent **devices**

Electrophotographic photoconductors (photoreceptors)

Hole transport

(triarylamine derivs. and its use as hole transport material in organic electroluminescent and electrophotog. **devices**)

IT 860465-06-1P 860465-11-8P

(preparation of triarylamine derivs. suitable as as hole transport material for organic **electroluminescent** and electrophotog. **devices**)

IT 860465-07-2P 860465-08-3P 860465-09-4P

860465-10-7P 860465-12-9P 860465-13-0P

(preparation of triarylamine derivs. suitable as as hole transport material for organic **electroluminescent** and electrophotog. **devices**)

IT 4316-58-9, Tris(4-bromophenyl)amine 574705-66-1 860465-14-1

860465-15-2 860465-16-3 860465-17-4 860465-18-5

860465-19-6 860465-20-9

(preparation of triarylamine derivs. suitable as as hole transport

material for organic electroluminescent and electrophotog.
devices)

IT 185690-39-5

(triarylamine derivs. suitable as hole transport material
for organic electroluminescent and electrophotog. **devices**
)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L31 ANSWER 2 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:302673 HCAPLUS

DOCUMENT NUMBER: 142:382308

TITLE: White-emitting organic electroluminescent
devices and displays showing little
chromaticity change

INVENTOR(S): Asaki, Akio; Kashiwabara, Mitsuhiro

PATENT ASSIGNEE(S): Sony Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 32 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

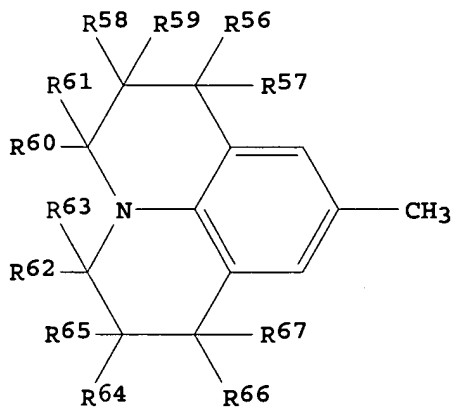
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
JP 2005093348	A2	20050407	JP 2003-328242	2003 0919

PRIORITY APPLN. INFO.:

<--
JP 2003-328242
2003
0919

OTHER SOURCE(S): MARPAT 142:382308
GI



AB The **devices** and displays have organic orange-emitting and

blue-emitting layers, where the orange-emitting layers contain hosts comprising ≥ 1 organic compds. and guests YCH:CHX [I; X = (substituted) Ph, (substituted) 1- or 2-naphthyl, (substituted) 1-, 2-, 3-, or 9-phenanthrenyl; Y = (N-alkyl or N-aryl)aminophenyl, (substituted) azahexahydrophenalenyl, (substituted) Ph; R58-R72 = H, alkyl, aryl, etc.]. Preferably, the hosts comprise red-, green-, and/or blue-emitting hosts, hole transporting substances, and mixts. of the hosts and hole transporting substances. Thus, a white-emitting organic electroluminescent device had an orange-emitting layer containing 9,10-di(2-naphthyl)anthracene as a blue-emitting host and I [X = 9,10-dicyano-6-methyl-3-phenanthrenyl, Y = [4-(4-methylphenyl)phenylamino]phenyl] as a guest.

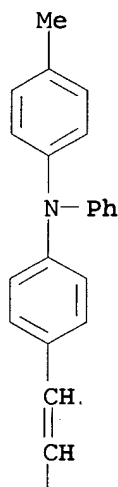
IT 445256-74-6

(blue-emitting host for orange-emitting layer; white-emitting organic electroluminescent devices and displays having orange-emitting and blue-emitting layers)

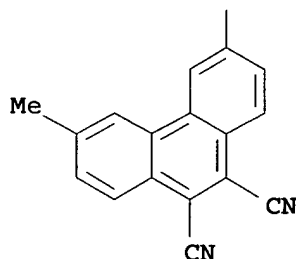
RN 445256-74-6 HCAPLUS

CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methylphenyl)phenylamino]phenyl]ethenyl] - (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM H05B033-14
ICS C09K011-06; H05B033-22

CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 73

ST white org electroluminescent **device** styryl guest; styryl guest white org electroluminescent display; orange styryl guest org electroluminescent **device**; blue naphthylanthracene host org electroluminescent **device**; phenylaminophenyl phenanthryl ethene guest org electroluminescent **device**

IT Electroluminescent **devices**
(displays; white-emitting organic electroluminescent **devices** and displays having orange-emitting and blue-emitting layers)

IT Luminescent screens
Luminescent substances
(electroluminescent; white-emitting organic electroluminescent **devices** and displays having orange-emitting and blue-emitting layers)

IT Electroluminescent **devices**
(white-emitting organic electroluminescent **devices** and displays having orange-emitting and blue-emitting layers)

IT **445256-74-6**
(blue-emitting host for orange-emitting layer; white-emitting organic **electroluminescent devices** and displays having orange-emitting and blue-emitting layers)

IT **445256-78-0 445256-81-5 445256-83-7**
637033-50-2 637033-54-6 637033-58-0
637033-70-6 637033-73-9 637033-78-4
637033-83-1 637033-86-4 637033-89-7
637033-90-0
(guest for orange-emitting layer; white-emitting organic **electroluminescent devices** and displays having orange-emitting and blue-emitting layers)

L31 ANSWER 3 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:302601 HCAPLUS

DOCUMENT NUMBER: 142:382302

TITLE: Organic electroluminescent elements with high brightness having dendritic luminescent substances, electric lights, and displays using them

INVENTOR(S): Ko, Hideo; Kita, Hiroshi

PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 67 pp.
CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005093098	A2	20050407	JP 2003-320898	2003 0912

PRIORITY APPLN. INFO.:

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 JP 2003-320898
 2003
 0912

AB The electroluminescent (EL) elements contain dendritic luminescent (fluorescent or phosphorescent) substances having repeating units Ar1L1 (Ar1 = arylene, heteroarylene; L1 = S, Se, Te, PR1, BR2, SiR3R4, GeR5R6; R1-6 = alkyl, aryl; R3-R4 and R5-R6 may form ring) with ≥ 2 generations.

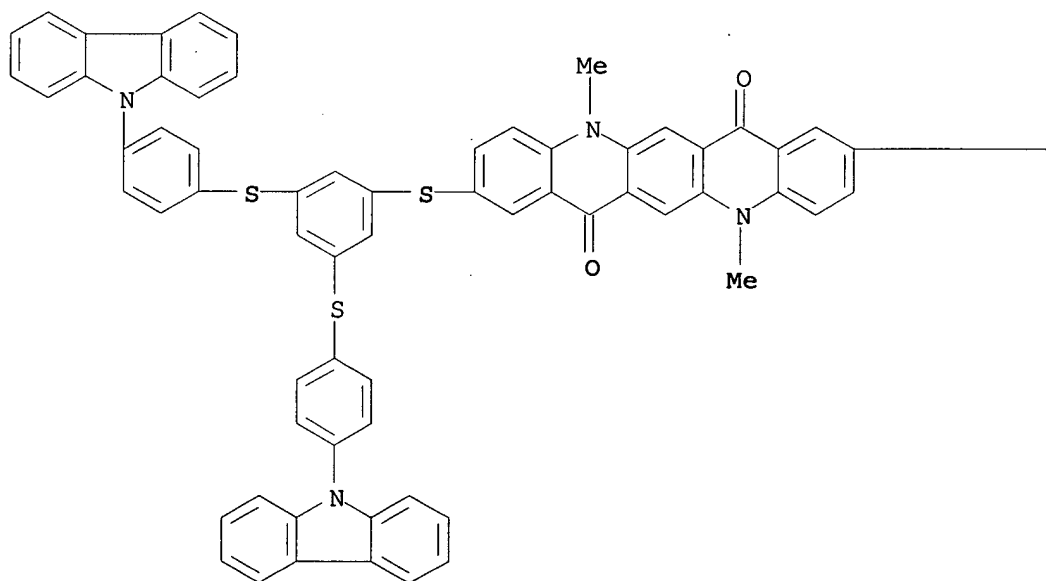
IT 849052-28-4

(phosphor; organic EL displays with high brightness having dendritic luminescent substances)

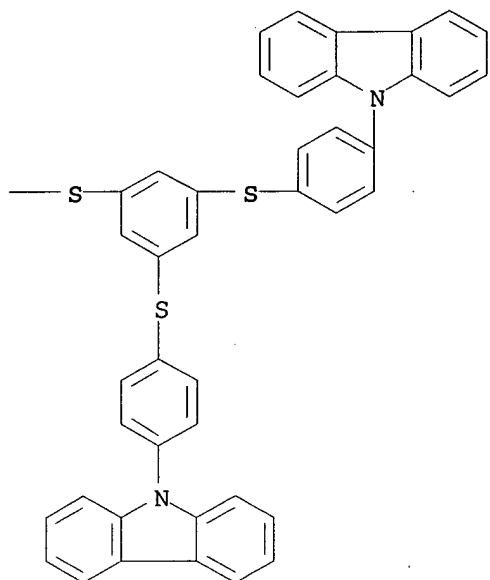
RN 849052-28-4 HCAPLUS

CN Quino[2,3-b]acridine-7,14-dione, 2,9-bis[[3,5-bis[[4-(9H-carbazol-9-yl)phenyl]thio]phenyl]thio]-5,12-dihydro-5,12-dimethyl- (9CI)
 (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM H05B033-14
ICS C09K011-06
CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 76
IT Electroluminescent **devices**
(displays; organic EL displays with high brightness having dendritic luminescent substances)
IT 849052-27-3 **849052-28-4** 849052-29-5 849052-30-8
849358-34-5 849358-35-6 849358-36-7 849358-37-8
849358-38-9 849360-86-7 849360-87-8 849360-88-9
(phosphor; organic **EL** displays with high brightness having dendritic **luminescent** substances)

L31 ANSWER 4 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:996248 HCAPLUS

DOCUMENT NUMBER: 141:425345

TITLE: Non-conjugated polymeric perarylated boranes, use thereof as organic semiconductor transmitters and/or transport materials, methods for producing same and uses thereof
INVENTOR(S): Kanitz, Andreas; Rogler, Wolfgang; Woerle, Jasmin

PATENT ASSIGNEE(S): Osram Opto Semiconductors, Germany

SOURCE: PCT Int. Appl., 60 pp.

CODEN: PIXXD2

DOCUMENT TYPE: **Patent**

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2004099291	A1	20041118	WO 2004-EP4901	

USHA SHRESTHA EIC 1700 REM 4B28

2004
0507

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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,
ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,
PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,
CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,
MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI,
CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

DE 102004001865 A1 20041216 DE 2004-102004001865

2004
0113

PRIORITY APPLN. INFO.:

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DE 2003-10320713 A

2003
0508

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DE 2004-102004001865A

2004
0113

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

AB Copolyarylborationes with non-conjugated aromatic and/or heteroarom.
luminophors (as an example I, II or others) are transformed into a
type of structure which acts like a conjugated polymer only when a
suitable elec. field is applied and/or in case of strong donor
substituents in aromatic part of the mol. Such polyarylborationes are
used in organic light-emitting diodes, organic solar cells, organic
photodetectors and organic field effect transistors. As an example,
I is prepared by reacting of Grignard reagents of the appropriate
fluorene component with diamine component and
dimethoxymesitylboration in THF. OLED manufactured by coating ITO with
II exhibits an effective electroluminescence with maximum 460-480 nm.

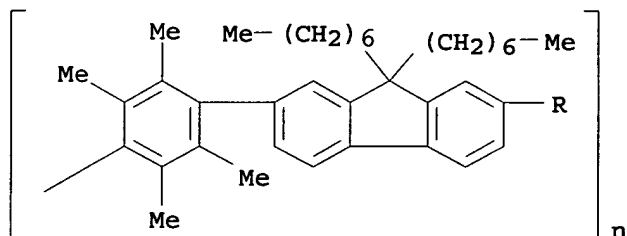
IT 794549-29-4P

(copolyarylborationes with non-conjugated luminophors
useful in light-emitting diodes, organic solar
cells, organic photodetectors and organic field effect transistors)

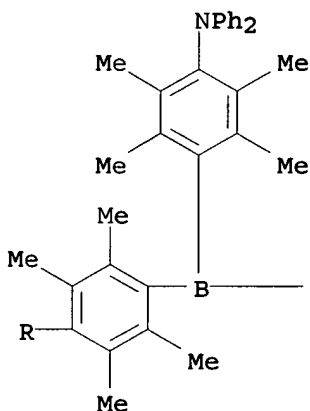
RN 794549-29-4 HCAPLUS

CN Poly[[[4-(diphenylamino)-2,3,5,6-tetramethylphenyl]borylene](2,3,5
,6-tetramethyl-1,4-phenylene)(9,9-diheptyl-9H-fluorene-2,7-
diyl)(2,3,5,6-tetramethyl-1,4-phenylene)] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM C08G079-00
 ICS C08G079-08; C08G083-00; C08G077-56; H01L051-00
 CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and
Photographic Sensitizers)
 Section cross-reference(s): 28
 IT Conducting polymers
 Electroluminescent **devices**
 Field effect transistors
 Luminescent substances
 Semiconductor **device** fabrication
 Solar cells
 (copolyarylborationes with non-conjugated luminophors useful in
 light-emitting diodes, organic solar cells, organic photodetectors
 and organic field effect transistors)
 IT 2633-66-1DP, Mesitylmagnesium bromide, reaction products with
 polufluorenyleneborane 351424-83-4DP, reaction products with
 polufluorenyleneborane 794549-09-0DP, reaction products with
 polufluorenyleneborane 794549-21-6P 794549-23-8DP, reaction
 products with mesityl magnesium bromide 794549-26-1P
 794549-29-4P 794549-34-1P
 (copolyarylborationes with non-conjugated **luminophors**
 useful in **light-emitting** diodes, organic solar
 cells, organic photodetectors and organic field effect transistors)
 REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

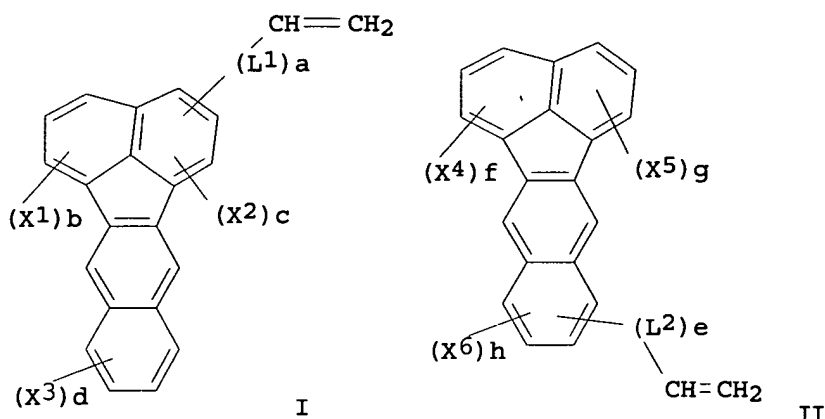
L31 ANSWER 5 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2004:904486 HCAPLUS
 DOCUMENT NUMBER: 141:386502
 TITLE: Organic electroluminescent **devices**
 with good durability for displays
 INVENTOR(S): Shirai, Satoshi; Ebisawa, Akira; Shinkai,
 Masahiro; Kanbe, Emiko
 PATENT ASSIGNEE(S): TDK Corporation, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 53 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: **Patent**
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004303488	A2	20041028	JP 2003-92621	2003 0328
WO 2004095888	A1	20041104	WO 2004-JP4439	2004 0329

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE,
 KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,
 MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT,
 RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT,
 TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW,
 AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY,
 CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,
 NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM,
 GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: JP 2003-92621 A 2003
 0328

GI



AB The organic electroluminescent (organic EL) **devices** consist of substrates, first electrode layers, organic layers containing vinyl polymers prepared by polymerization of I or II (L1, L2 = divalent group; X1-X6 = alkyl, alkoxy, aryl, aryloxy, heterocyclic ring, amino, halo, cyano; a, e = 0, 1; b, f, g, h = 0-3; c = 0-2; d = 0-4), and second electrode layers. The organic EL **devices** show high luminescence efficiency.

IT 784201-46-3

(organic electroluminescent **devices** having fluoranthene-containing vinyl polymer layers)

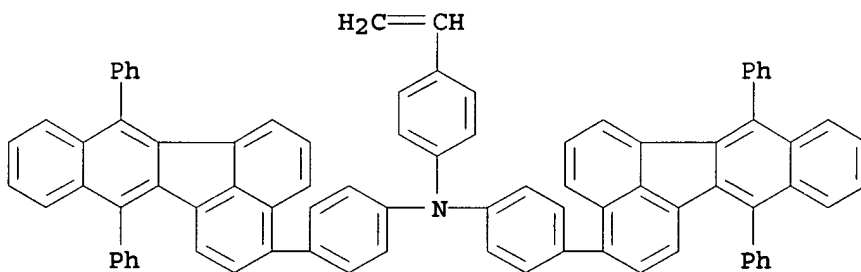
RN 784201-46-3 HCAPLUS

CN Benzenamine, N,N-bis[4-(7,12-diphenylbenzo[k]fluoranthene-3-yl)phenyl]-4-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 784201-45-2

CMF C84 H53 N



IC ICM H05B033-14

ICS C08F012-32; C09K011-06; H05B033-22

CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 25, 38, 73

ST org electroluminescent **device** display fluoranthene vinyl polymer; vinylphenyl diphenylbenzofluoranthene polymer luminescent blue EL **device**

IT Electroluminescent **devices**

(blue-emitting; organic electroluminescent **devices** having fluorethane-containing vinyl polymer layers)

IT Electroluminescent **devices** (displays, organic; organic electroluminescent **devices** having fluorethane-containing vinyl polymer layers)

IT Luminescent screens (electroluminescent, organic; organic electroluminescent **devices** having fluorethane-containing vinyl polymer layers)

IT Luminescent substances (electroluminescent; organic electroluminescent **devices** having fluorethane-containing vinyl polymer layers)

IT 96277-13-3 (dopant; organic electroluminescent **devices** having fluorethane-containing vinyl polymer layers)

IT 784201-46-3 (organic **electroluminescent devices** having fluorethane-containing vinyl polymer layers)

IT 784201-44-1P 784201-47-4P (organic electroluminescent **devices** having fluorethane-containing vinyl polymer layers)

IT 7267-03-0P, 5-Bromoacenaphthylene 16391-62-1P 784201-43-0P (organic electroluminescent **devices** having fluorethane-containing vinyl polymer layers)

IT 2051-98-1, 5-Bromoacenaphthene 2156-04-9, 4-Vinylphenylboronic acid 7111-67-3 (organic electroluminescent **devices** having fluorethane-containing vinyl polymer layers)

L31 ANSWER 6 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:634243 HCAPLUS

DOCUMENT NUMBER: 141:182077

TITLE: Organic electroluminescence **device** showing high emission efficiency and extended service life for full color display

INVENTOR(S): Arakane, Takashi; Iwakuma, Toshihiro; Hosokawa, Chishio

PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan

SOURCE: PCT Int. Appl., 55 pp.

CODEN: PIXXD2

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004066685	A1	20040805	WO 2004-JP236	2004 0115

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W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GH, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ

PRIORITY APPLN. INFO.:

JP 2003-16505

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0124

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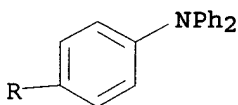
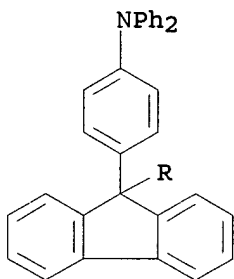
AB An organic electroluminescence **device** has at least a hole-transport layer and a light-emitting layer made of a phosphorescent light-emitting material and a host material between a cathode and an anode. The triplet energy of the hole-transport material of the hole-transport layer is 2.52-3.70 eV. The hole mobility is 10⁻⁶ cm²/Vs at an elec. field strength of 0.1-0.6 MV/cm. Thus an organic electroluminescence **device** using phosphorescence emission, exhibiting a high emission efficiency, and having a long life is provided.

IT 166444-95-7

(hole transport material; organic **electroluminescence device** showing high emission efficiency and extended service life)

RN 166444-95-7 HCAPLUS

CN Benzenamine, 4,4'-(9H-fluoren-9-ylidene)bis[N,N-diphenyl- (9CI)
(CA INDEX NAME)



IC ICM H05B033-22

ICS H05B033-14

CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 73

ST org electroluminescent **device** hole transport material
color display

IT Electroluminescent **devices**

(displays; organic electroluminescence **device** showing
high emission efficiency and extended service life)

IT Luminescent screens

(electroluminescent; organic electroluminescence **device**
showing high emission efficiency and extended service life)

IT 58473-78-2 139092-78-7 166444-95-7 211685-93-7
354135-69-6

(hole transport material; organic **electroluminescence device** showing high emission efficiency and extended service life)

IT 607740-04-5 607740-05-6 607740-09-0

(host material; organic electroluminescence **device**
showing high emission efficiency and extended service life)

L31 ANSWER 7 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:632515 HCAPLUS

DOCUMENT NUMBER: 141:182064

TITLE: Organic electroluminescent **device**
showing stable operation for flat panel
display

INVENTOR(S): Yoneyama, Tomio; Sato, Itsuki; Sato, Hideki

PATENT ASSIGNEE(S): Mitsubishi Chemical Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 38 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

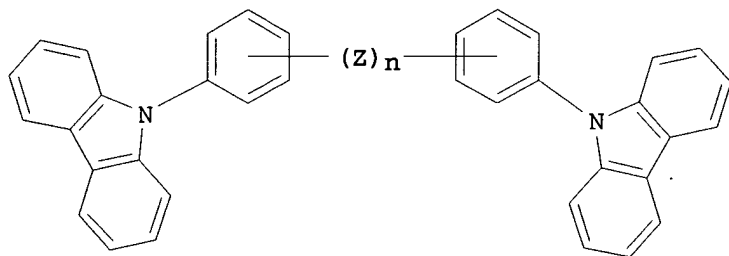
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2004220931	A2	20040805	JP 2003-7300	2003 0115

PRIORITY APPLN. INFO.: <-- JP 2003-7300

2003
0115

OTHER SOURCE(S): MARPAT 141:182064
GI



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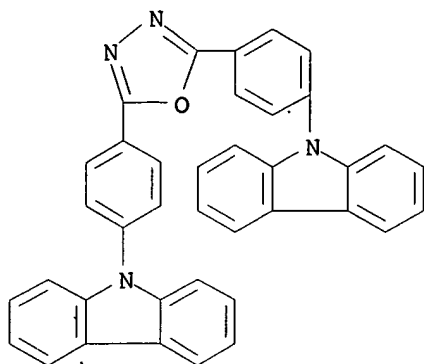
AB The title electroluminescent **device** includes a compound represented by I (Z = divalent connection group; n = 0-5) in a pos. hole blocking layer. The compds. were synthesized in the examples.

IT 733038-87-4P

(preparation of pos. hole blocking material for organic
electroluminescent device showing stable
operation for flat panel display)

RN 733038-87-4 HCAPLUS

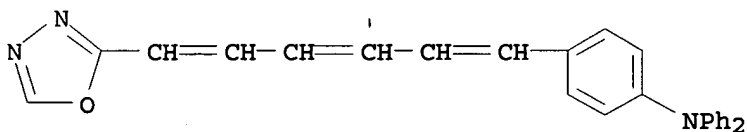
CN 9H-Carbazole, 9,9'-(1,3,4-oxadiazole-2,5-diyl-di-4,1-phenylene)bis-
(9CI) (CA INDEX NAME)



IC ICM H05B033-22
ICS C07D403-10; C07D403-12; C07D413-10; C09K011-06; H05B033-14
CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
ST org electroluminescent **device** display pos hole blocking
material
IT Electroluminescent **devices**
(displays; organic electroluminescent **device** showing
stable operation for flat panel display)
IT Luminescent screens
(electroluminescent; organic electroluminescent **device**
showing stable operation for flat panel display)
IT 733038-87-4P 733038-89-6P 733038-91-0P
(preparation of pos. hole blocking material for organic
electroluminescent device showing stable
operation for flat panel display)
IT 80-08-0, Bis(4-aminophenyl)sulfone 86-74-8, Carbazole
341-58-2, 4,4'-Diamino-2,2'-bis(trifluoromethyl)biphenyl
2425-95-8, 2,5-Bis(4-aminophenyl)-1,3,4-oxadiazole 7681-11-0,
Potassium iodide, reactions
(preparation of pos. hole blocking material for organic
electroluminescent **device** showing stable operation
for flat panel display)
IT 100541-43-3P
(preparation of pos. hole blocking material for organic
electroluminescent **device** showing stable operation
for flat panel display)

L31 ANSWER 8 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:609956 HCAPLUS
DOCUMENT NUMBER: 141:164924
TITLE: Molecular chemical compounds for emitting
photoluminescent radiation, and
photoluminescence quenching **device**
employing the same
INVENTOR(S): Redecker, Michael
PATENT ASSIGNEE(S): Germany
SOURCE: U.S. Pat. Appl. Publ., 15 pp.
CODEN: USXXCO
DOCUMENT TYPE: **Patent**
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004147701	A1	20040729	US 2003-727642	2003 1205
EP 1443093	A1	20040804	EP 2003-90022	2003 0129
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1519235	A	20040811	CN 2003-10114718	2003 1231
JP 2004339190	A2	20041202	JP 2004-7343	2004 0114
PRIORITY APPLN. INFO.:				
			EP 2003-90022	A 2003 0129
			KR 2003-59486	A 2003 0827
AB A chemical compound has an electron donor group, an electron acceptor group, and a conjugated bridging element bridging between the electron donor group and the electron acceptor group. The chemical compound has a readily displaceable electron, is capable of emitting photoluminescent radiation. A dipole character is present therein only in the excited state of the compound. The compds. are suitable for use in optical devices and, particularly, can be used for photoluminescence quenching devices .				
IT 728915-85-3 (mol. chemical compds. for emitting photoluminescent radiation for photoluminescence quenching device)				
RN 728915-85-3 HCAPLUS				
CN Benzenamine, 4-[6-(1,3,4-oxadiazol-2-yl)-1,3,5-hexatrienyl]-N,N-diphenyl- (9CI) (CA INDEX NAME)				



IC ICM C08G061-00
ICS C08G079-08
INCL 528004000
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST Luminescence quenching device display electron

displacement emitting
IT Luminescence quenching
Optical imaging **devices**
(mol. chemical compds. for emitting photoluminescent radiation for
photoluminescence quenching **device**)
IT 728915-85-3 728915-86-4 728915-87-5
728915-89-7 728915-91-1
(mol. chemical compds. for emitting **photoluminescent**
radiation for **photoluminescence** quenching
device)

L31 ANSWER 9 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:412156 HCAPLUS

DOCUMENT NUMBER: 140:397473

TITLE: Organic electroluminescent **devices**
with cathode buffer layers containing
dihydrophenazine derivatives

INVENTOR(S): Fujishita, Yuichi; Uchida, Manabu; Kikugawa,
Shingo; Okada, Keiji; Ozaki, Masatoshi;
Okamoto, Toshihiro

PATENT ASSIGNEE(S): Chisso Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004146110	A2	20040520	JP 2002-307189	2002 1022

PRIORITY APPLN. INFO.:

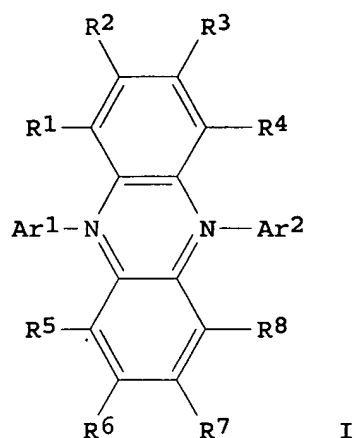
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JP 2002-307189

2002
1022

OTHER SOURCE(S):
GI

MARPAT 140:397473

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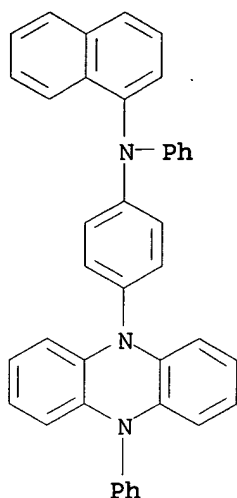


AB The **device** has a laminate structure at least including an cathode buffer layer, a hole transporting layer, and a light-emitting layer with the cathode buffer layer containing dihydrophenazine derivs. I (R1-R8 = H, (un)substituted aryl, heterocycle, (cyclo)alkyl, alkenyl, alkoxy, alkenyloxy, alkynyloxy, aryloxy, amino; Ar1, Ar2 = (un)substituted aryl, heterocycle, (cyclo)alkyl). Preferably, the hole transport layer of the **device** contains II or III (Ar3 = (un)substituted arylene; R9-R32 = groups same as R1-R8; Ar4 = arylene; Ar5 = (un)substituted aryl, heterocycle; R33, R34 = H, (un)substituted aryl, heterocycle, (cyclo)alkyl; n = integer of 2-4). The **devices** show high light emission efficiency and have long service life.

IT 500556-21-8
(in cathode buffer layer; organic **EL devices**
with cathode buffer layers containing dihydrophenazine derivs. long
service life)

RN 500556-21-8 HCAPLUS

CN 1-Naphthalenamine, N-phenyl-N-[4-(10-phenyl-5(10H)-
phenaziny]phenyl]- (9CI) (CA INDEX NAME)



IC ICM H05B033-22
ICS C09K011-06; H05B033-14
CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 25, 28
ST dihydrophenazine deriv cathode buffer org electroluminescent **device**; carbazole hole transporting layer org electroluminescent **device**; triarylamine hole transporting layer org electroluminescent **device**
IT Electroluminescent **devices**
(displays, organic; organic EL **devices** with cathode buffer layers containing dihydrophenazine derivs. long service life)
IT Luminescent screens
(electroluminescent, organic; organic EL **devices** with cathode buffer layers containing dihydrophenazine derivs. long service life)
IT 500556-21-8 500556-23-0 500556-25-2
(in cathode buffer layer; organic EL **devices** with cathode buffer layers containing dihydrophenazine derivs. long service life)
IT 123847-85-8
(in hole transport layer; organic EL **devices** with cathode buffer layers containing dihydrophenazine derivs. long service life)

L31 ANSWER 10 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:203794 HCAPLUS

DOCUMENT NUMBER: 140:237125

TITLE: Monooamino fluorescent dyes and organic luminescence **devices** using them

INVENTOR(S): Saito, Akihito; Hiraoka, Mizuho; Senoo, Akihiro; Tanabe, Hiroshi; Yamada, Naoki; Negishi, Chika

PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan

SOURCE: PCT Int. Appl., 85 pp.

CODEN: PIXXD2

DOCUMENT TYPE: **Patent**

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004020388	A1	20040311	WO 2003-JP10700	2003 0825

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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

JP 2004083513	A2	20040318	JP 2002-248745	2002 0828
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PRIORITY APPLN. INFO.:

JP 2002-248745

A

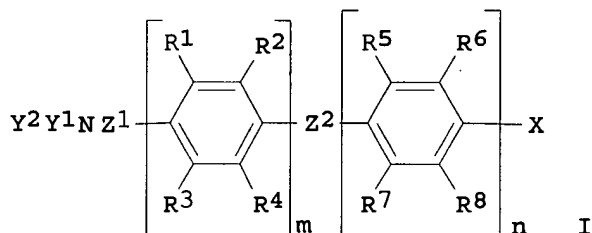
2002
0828

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OTHER SOURCE(S):

MARPAT 140:237125

GI



AB Disclosed are monoamino fluorescent dyes (I; R1-R8 = H, halogen, organic group; X = H, halogen, organic group; Y1, Y2 = organic group, Y1Y2 may form a ring; Z1, Z2 = divalent group; m + n = 4-10). Using I, organic (electro)luminescence devices are provided, which exhibits a luminescence hue with extremely high purity, and having an optical output of a high luminance with a high efficiency and a long life time. In an example, 4,4'-dibromo-2,2',3,3',5,5',6,6'-octafluoro-1,1'-biphenyl was condensed (1:1) with 9-(phenylamino)anthracene and the monobromo product was treated with 1-naphthylboronic acid to provide a fluorescent amine dye.

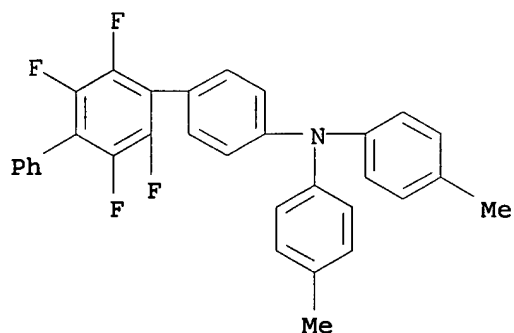
IT 668994-15-8

(amine fluorescent dyes and organic luminescence devices using them)

RN 668994-15-8 HCAPLUS

CN [1,1':4',1''-Terphenyl]-4-amine, 2',3',5',6'-tetrafluoro-N,N-bis(4-

methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM C07C211-61
ICS C07C211-54; C09K011-06; H05B033-14

CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and
Photographic Sensitizers)
Section cross-reference(s): 25, 74, 76

ST fluorescent amine dye prodn electroluminescent **device**

IT Electroluminescent **devices**
Fluorescent dyes
(production of amine fluorescent dyes and organic luminescence
devices using them)

IT 668994-13-6 668994-14-7 **668994-15-8**
668994-16-9 668994-23-8
(amine fluorescent dyes and **organic luminescence**
devices using them)

IT **361486-60-4** 475461-36-0 569343-08-4 608130-98-9
668994-18-1 668994-19-2 668994-20-5
(in **organic luminescence devices**
using amine fluorescent dyes)

IT 668994-21-6P 668994-22-7P
(intermediate; production of amine fluorescent dyes and organic
luminescence **devices** using them)

IT **668994-12-5P 668994-17-0P**
(production of amine fluorescent dyes and **organic**
luminescence devices using them)

IT 523-27-3, 9,10-Dibromoanthracene 5122-94-1, 4-Biphenylboronic
acid 10386-84-2 13922-41-3, 1-Naphthylboronic acid
15424-38-1 654067-65-9
(starting material; production of amine fluorescent dyes and organic
luminescence **devices** using them)

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L31 ANSWER 11 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:203793 HCAPLUS

DOCUMENT NUMBER: 140:254984

TITLE: Monoaminofluorene dyes and organic
light-emitting **device** using them

INVENTOR(S): Saito, Akihito; Hiraoka, Mizuho; Suzuki,
Koichi; Senoo, Akihiro; Tanabe, Hiroshi;
Yamada, Naoki; Negishi, Chika

PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan

SOURCE: PCT Int. Appl., 101 pp.

DOCUMENT TYPE: CODEN: PIXXD2
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: English
 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004020387	A1	20040311	WO 2003-JP10260	2003 0812

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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

JP 2004091350	A2	20040325	JP 2002-252846	2002 0830
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EP 1542962	A1	20050622	EP 2003-791210	2003 0812
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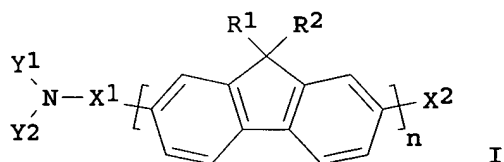
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

PRIORITY APPLN. INFO.: JP 2002-252846 A 2002
0830

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WO 2003-JP10260 W 2003
0812

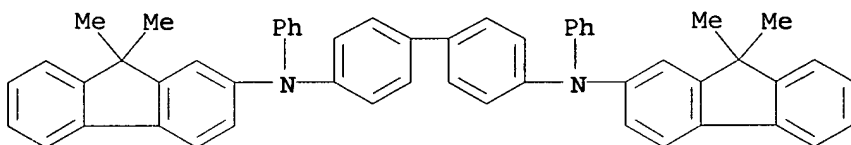
OTHER SOURCE(S): MARPAT 140:254984
 GI



AB Novel monoaminofluorene dyes (I; R1, R2 = H, organic group; X = H, halogen, organic group, CN; Y1, Y2 = organic group, Y1 and Y2 together may form a ring; Z = organic divalent group, direct bond; n = 1-10)

are provided. Organic light-emitting/electroluminescent **devices** using I exhibit good luminescence hue of extremely high purity and have optical output with high luminescence efficiency, high luminance and longer operating life. In an example, 2,2'-bis(9,9-dimethylfluorene) was prepared, monoiodinated on the 7-position, and condensed with bis(p-tolyl)amine to provide a fluorescent dye.

IT 361486-60-4
(in organic light-emitting devices
using monoaminofluorene dyes)
RN 361486-60-4 HCAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(9,9-dimethyl-9H-fluoren-2-yl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IC ICM C07C211-61
ICS C09K011-06; H05B033-14
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and
Photographic Sensitizers)
Section cross-reference(s): 25, 74, 76
ST fluorene amine dye prodn electroluminescent device
IT Electroluminescent devices
Fluorescent dyes
(production of monoaminofluorene dyes and organic light-emitting
devices using them)
IT 361486-60-4 441352-90-5 475461-36-0 549528-98-5
608130-98-9 668994-18-1 668994-19-2 668994-20-5
(in organic light-emitting devices
using monoaminofluorene dyes)
IT 400607-20-7P 505078-42-2P 669059-71-6P 669059-73-8P
(intermediate; production of monoaminofluorene dyes and organic
light-emitting devices using them)
IT 669059-26-1 669059-28-3 669059-32-9
669059-33-0 669059-37-4 669059-39-6
669059-41-0 669059-43-2 669059-45-4
669059-47-6 669059-49-8 669059-51-2
669059-55-6 669059-57-8
(monoaminofluorene dyes and organic light-
emitting devices using them)
IT 669059-30-7P 669059-35-2P 669059-53-4P
(production of monoaminofluorene dyes and organic light-
emitting devices using them)
IT 620-93-9 4612-26-4, p-Phenylenediboronic acid 7553-56-2,
Iodine, reactions 144981-85-1, 2-Iodo-9,9-dimethylfluorene
333432-28-3 654067-65-9
(starting material; production of monoaminofluorene dyes and organic
light-emitting devices using them)
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L31 ANSWER 12 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:203785 HCAPLUS

DOCUMENT NUMBER: 140:254983
 TITLE: Spirobifluorene dyes and organic electroluminescent devices using them
 INVENTOR(S): Suzuki, Koichi; Hiraoka, Mizuho; Senoo, Akihiro; Yamada, Naoki; Negishi, Chika; Saito, Akihito
 PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan
 SOURCE: PCT Int. Appl., 91 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004020373	A1	20040311	WO 2003-JP10258	2003 0812

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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

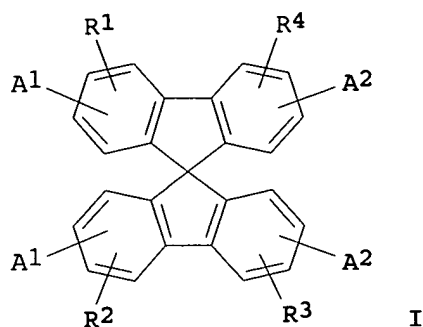
JP 2004083483	A2	20040318	JP 2002-246601	2002 0827
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PRIORITY APPLN. INFO.: JP 2002-246601 A 2002
0827

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OTHER SOURCE(S): MARPAT 140:254983
 GI



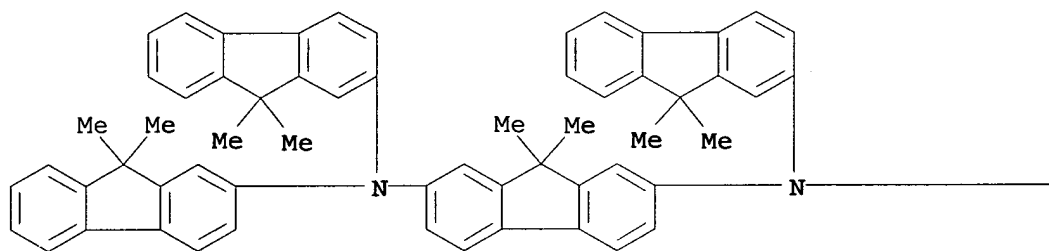
AB Provided are novel spirobifluorenes (I; A1, A2 = optionally substituted polycyclic aromatic or heterocyclic group; R1-R4 = H, organic group, substituted amino, CN, halogen). Organic electroluminescence devices using the spiro compound have an optical output with an extremely high efficiency and a high luminance, and an extremely high durability. In an example, 2,2',7,7'-tetrabromo-9,9'-spirobifluorene was treated with 9,9-dimethylfluorene-2-boronic acid in the presence of Pd(PPh₃)₄ to give a spirobifluorene compound containing 4 dimethylfluorene groups.

IT 216454-35-2
(in organic electroluminescent devices containing spirobifluorene dyes)

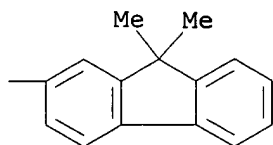
RN 216454-35-2 HCAPLUS

CN 9H-Fluorene-2,7-diamine, N,N,N',N'-tetrakis(9,9-dimethyl-9H-fluoren-2-yl)-9,9-dimethyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM C07C013-72
ICS C07C025-22; C07C255-52; C07D209-86; C07D219-02; C07D471-04;
C07F007-08; C07F007-12; C09K011-06; H05B033-14; H05B033-22

CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and
Photographic Sensitizers)
Section cross-reference(s): 25, 29, 74, 76

ST spirobifluorene dye prodn electroluminescent device

IT Electroluminescent devices
Fluorescent dyes
(spirobifluorene dyes and organic electroluminescent
devices using them)

IT 143886-09-3 203459-05-6 216454-35-2
228871-85-0 239475-91-3 361486-60-4
522653-17-4 607739-77-5 607739-84-4
669016-10-8 669016-11-9 669016-12-0
669016-13-1 669016-14-2 669016-15-3
669016-16-4 669016-17-5 669016-18-6
669016-19-7 669016-20-0 669016-21-1
669016-22-2 669016-23-3 669016-24-4
669016-25-5 669016-26-6 669016-27-7
669016-28-8 669016-29-9 669016-30-2
669077-94-5 669077-95-6 669078-02-8
669078-03-9 669078-04-0
(in organic electroluminescent devices containing
spirobifluorene dyes)

IT 178941-82-7P
(intermediate; production of spirobifluorene dyes and organic
electroluminescent devices using them)

IT 214078-86-1P 608130-98-9P 668994-20-5P 669077-87-6P
669078-05-1P
(spirobifluorene dyes and organic electroluminescent
devices using them)

IT 669077-72-9 669077-73-0 669077-74-1 669077-75-2
669077-76-3 669077-77-4 669077-78-5 669077-79-6
669077-80-9 669077-81-0 669077-82-1 669077-83-2
669077-84-3 669077-85-4 669077-86-5 669077-88-7
669077-89-8 669077-90-1 669077-91-2 669077-92-3
669077-93-4 669078-06-2 669078-07-3
(spirobifluorene dyes and organic electroluminescent
devices using them)

IT 86-74-8, Carbazole 159-68-2, 5,5'-Spirobi(dibenzosilole)
7726-95-6, Bromine, reactions 128055-74-3, 2,2',7,7'-Tetrabromo-
9,9'-spirobifluorene 164461-18-1 333432-28-3
(starting material; production of spirobifluorene dyes and organic
electroluminescent devices using them)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L31 ANSWER 13 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:203784 HCAPLUS

DOCUMENT NUMBER: 140:254982

TITLE: Fluorene dyes and organic electroluminescent
devices using them

INVENTOR(S): Suzuki, Koichi; Hiraoka, Mizuho; Senoo,
Akihiro; Yamada, Naoki; Negishi, Chika; Saito,
Akihito; Tanaka, Daisaku; Yashiro, Ryoji

PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan

SOURCE: PCT Int. Appl., 87 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004020372	A1	20040311	WO 2003-JP10259	2003 0812

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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

JP 2004083481	A2	20040318	JP 2002-246447	2002 0827
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EP 1532089	A1	20050525	EP 2003-791209	2003 0812
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

US 2004253389	A1	20041216	US 2004-491745	2004 0406
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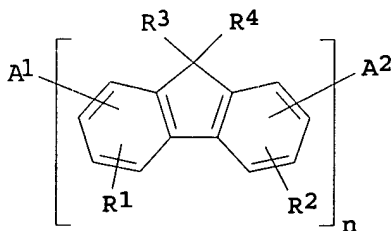
PRIORITY APPLN. INFO.: JP 2002-246447 A

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WO 2003-JP10259	W	2003 0812
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OTHER SOURCE(S): MARPAT 140:254982
 GI



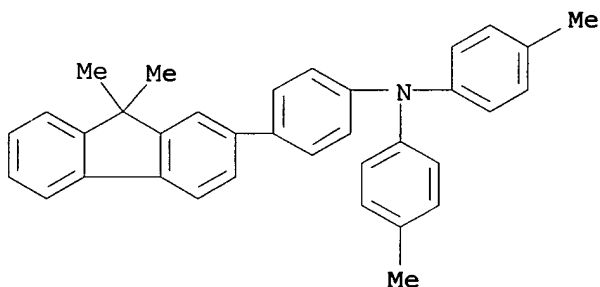
AB Fluorene dyes (I; A1, A2 = optionally substituted polycyclic aromatic group; R1, R2 = H, organic group, substituted amino, CN, halogen; n = 1-10) are disclosed which are used to provide organic electroluminescent devices. Such devices have an optical output exhibiting a high luminance with an extremely high efficiency, and have extremely high durability. In an example, 2,7-dibromo-9,9-dimethylfluorene was condensed (1:2) with 1-pyreneboronic acid to give a fluorescent dye.

IT 202590-16-7

(in organic electroluminescent devices using fluorene dyes)

RN 202590-16-7 HCAPLUS

CN Benzenamine, 4-(9,9-dimethyl-9H-fluoren-2-yl)-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM C07C013-573

ICS C07C013-62; C07C013-66; C07C022-08; C07C025-22; C07C211-61; C07C217-92; C07D213-53; C07D219-02; C07D333-16; C09K011-06; H05B033-14; H05B033-22

CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 25, 74, 76

ST fluorene dye prodn electroluminescent device

IT Electroluminescent devices

Fluorescent dyes

(fluorene dyes and organic electroluminescent devices using them)

IT 669015-91-2 669015-92-3 669015-95-6 669015-96-7
669015-97-8 669015-98-9 669015-99-0 669016-00-6
669016-01-7 669016-02-8 669016-03-9 669016-04-0
669016-05-1 669016-06-2 669016-07-3 669016-48-2
669016-49-3 669016-50-6 669701-49-9

(fluorene dyes and organic electroluminescent devices using them)

IT 33895-41-9 34904-22-8 106614-56-6 130965-28-5 143886-09-3
202590-16-7 203459-05-6 216454-35-2
228871-85-0 239475-91-3 361486-60-4
522653-17-4 607739-77-5 607739-84-4
669016-09-5 669016-10-8 669016-11-9
669016-12-0 669016-13-1 669016-14-2
669016-15-3 669016-16-4 669016-17-5
669016-18-6 669016-19-7 669016-20-0
669016-21-1 669016-22-2 669016-23-3
669016-24-4 669016-25-5 669016-26-6
669016-27-7 669016-28-8 669016-29-9

669016-30-2 669016-31-3 669016-32-4
669016-33-5 669016-34-6 669016-35-7
669016-36-8 669016-37-9 669016-38-0 669016-39-1
669016-40-4 669016-41-5 669016-42-6 669016-43-7
669016-44-8 669016-45-9 669016-46-0 669016-47-1

(in organic electroluminescent devices using
fluorene dyes)

IT 607739-80-0P 607739-82-2P 669015-93-4P 669016-08-4P
(production of fluorene dyes and organic electroluminescent
devices using them)

IT 23683-68-3, 3-Bromoperylene 28320-32-3, 2,7-Dibromo-9,9-
dimethylfluorene 164461-18-1 325129-69-9 607739-64-0
669015-94-5

(starting material; production of fluorene dyes and organic
electroluminescent devices using them)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L31 ANSWER 14 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:118662 HCAPLUS

DOCUMENT NUMBER: 140:172301

TITLE: Organic electroluminescent elements with
improved brightness and durability and color
displays using them

INVENTOR(S): Ueda, Noriko; Yamada, Taketoshi; Kita, Hiroshi

PATENT ASSIGNEE(S): Konica Minolta Holdings Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 57 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004047443	A2	20040212	JP 2003-134267	2003 0513

PRIORITY APPLN. INFO.: JP 2002-140103 A 2002
0515

OTHER SOURCE(S): MARPAT 140:172301

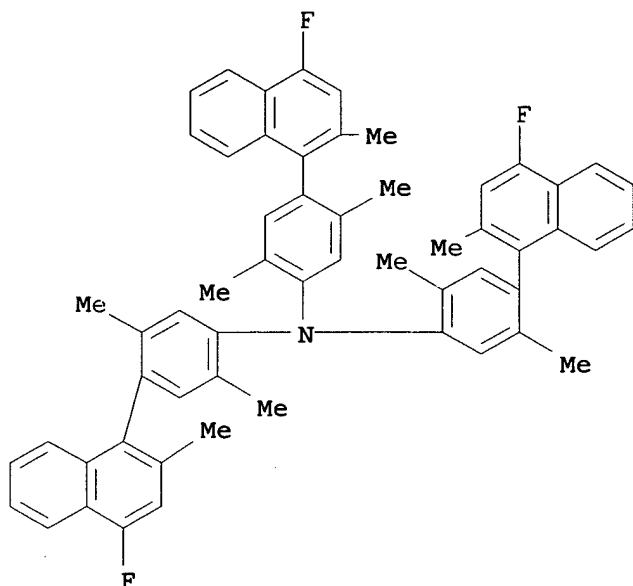
AB The elements contain , R1R2R3N [R1-3 = substituted p-A-Ph; A =
(un)substituted aromatic hydrocarbyl], preferably in hole-transport
layers. The elements may have light-emitting layers containing
phosphorescent complexes of Group VIII metals (Os, Ir, or Pt,
preferably) and ≥ 1 fluorescent compds. having maximum
fluorescence wavelength longer than maximum emission wavelength of
the complexes.

IT 655240-47-4
(hole-transport or light-emitting layer;
organic EL elements containing triphenylamine-based compds.
with improved brightness and durability for displays)

RN 655240-47-4 HCAPLUS

CN Benzenamine, 4-(4-fluoro-2-methyl-1-naphthalenyl)-N,N-bis[4-(4-
fluoro-2-methyl-1-naphthalenyl)-2,5-dimethylphenyl]-2,5-dimethyl-

(9CI) (CA INDEX NAME)



IC ICM H05B033-14
ICS C09K011-06
CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
IT Electroluminescent **devices**
(displays; organic EL elements containing triphenylamine-based compds.
with improved brightness and durability for displays)
IT 405171-87-1 **655240-47-4**
(hole-transport or **light-emitting** layer;
organic **EL** elements containing triphenylamine-based compds.
with improved brightness and durability for displays)

L31 ANSWER 15 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:118629 HCAPLUS

DOCUMENT NUMBER: 140:172298

TITLE: Organic electroluminescent elements with
improved brightness and durability and
displays using them

INVENTOR(S): Yamada, Taketoshi; Kita, Hiroshi

PATENT ASSIGNEE(S): Konica Minolta Holdings Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 31 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

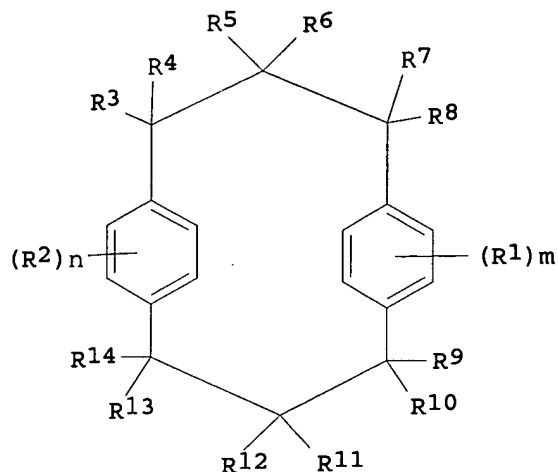
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004047329	A2	20040212	JP 2002-204254	2002 0712

PRIORITY APPLN. INFO.:

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JP 2002-2042542002
0712OTHER SOURCE(S): MARPAT 140:172298
GI

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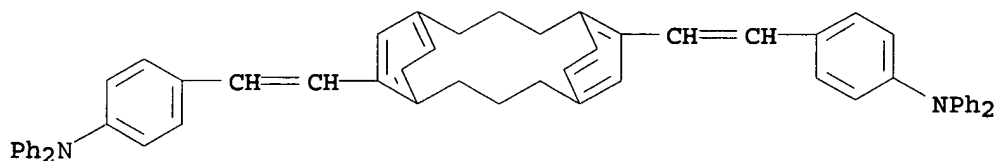
I

AB The elements contain I (R1,2 = substituent; m, n = 1-4; R3-14 = H, substituent), preferably in electron-transfer layers or light-emitting layers. The light-emitting layers preferably contain I as hosts and phosphors selected from Ir, Os, or Pt compds.

IT 655243-36-0
(light-emitting layer; cyclophane-based organic EL elements with improved brightness and durability for displays)

RN 655243-36-0 HCAPLUS

CN Benzenamine, 4,4'-(tricyclo[10.2.2.25,8]octadeca-5,7,12,14,15,17-hexaene-6,13-diyl-di-2,1-ethenediyl)bis[N,N-diphenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-22

ICS C09K011-06; H05B033-14

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73

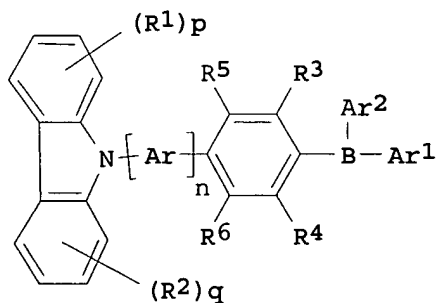
IT Electroluminescent devices
(displays; cyclophane-based organic EL elements with improved

brightness and durability for displays)

IT 655243-35-9 655243-36-0 655243-42-8
655243-44-0 655243-45-1 655243-47-3
(light-emitting layer; cyclophane-based
organic EL elements with improved brightness and
durability for displays)

L31 ANSWER 16 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:32979 HCAPLUS
DOCUMENT NUMBER: 140:102115
TITLE: Organic electroluminescent devices
and displays having high luminescence
intensity and long service life
INVENTOR(S): Yamada, Taketoshi; Kita, Hiroshi
PATENT ASSIGNEE(S): Konica Minolta Holdings Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 35 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2004014440	A2	20040115	JP 2002-169802	2002 0611
PRIORITY APPLN. INFO.:			JP 2002-169802	2002 0611
OTHER SOURCE(S):			MARPAT 140:102115	
GI				

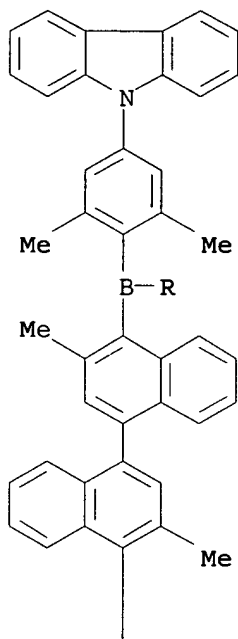


AB The **devices** contain N-carbazolyl group-containing triarylboranes I (R1, R2 = substituent; R3-R6 = H, substituent; R3 and/or R4 are substituents; Ar = arylene; Ar1, Ar2 = aryl; n = 0-8; p = 1-4; q = 1-4) in electron-transport layers or emitter layers.

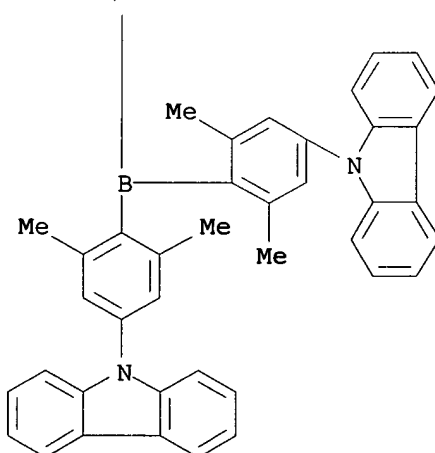
IT **643758-15-0**
(organic electroluminescent devices and

displays containing N-carbazolyl group-containing triarylboranes)
RN 643758-15-0 HCAPLUS
CN 9H-Carbazole, 9,9',9'',9'''-[(3,3'-dimethyl[1,1'-binaphthalene]-
4,4'-diyl)bis[boryldynebis(3,5-dimethyl-4,1-phenylene)]]tetrakis-
(9CI) (CA INDEX NAME)

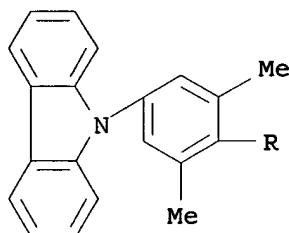
PAGE 1-A



PAGE 2-A



PAGE 3-A



IC ICM H05B033-22
ICS C09K011-06; H05B033-14
CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 73
ST carbazoyl arylborane electron transport electroluminescent **device**; emitter iridium carbazoyl arylborane electroluminescent display
IT Electroluminescent **devices**
(displays; organic electroluminescent **devices** and displays containing N-carbazoyl group-containing triarylboranes)
IT Luminescent screens
(electroluminescent; organic electroluminescent **devices** and displays containing N-carbazoyl group-containing triarylboranes)
IT 343978-79-0 344426-19-3 387859-70-3 643758-24-1
(dopant in emitter layer; organic electroluminescent **devices** and displays containing N-carbazoyl group-containing triarylboranes)
IT 7440-04-2D, Osmium, compds. 7440-06-4D, Platinum, compds.
(dopants in emitter layers; organic electroluminescent **devices** and displays containing N-carbazoyl group-containing triarylboranes)
IT 643758-09-2 643758-10-5 643758-11-6 643758-12-7
643758-13-8 643758-14-9 **643758-15-0** 643758-16-1
643758-17-2 643758-18-3 643758-19-4 **643758-20-7**
643758-21-8 643758-22-9 **643758-23-0**
(organic electroluminescent **devices** and displays containing N-carbazoyl group-containing triarylboranes)

L31 ANSWER 17 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:988088 HCAPLUS

DOCUMENT NUMBER: 141:113985

TITLE: Inkjet printing of light-emitting polymer displays

AUTHOR(S): Shimoda, Tatsuya; Morii, Katsuyuki; Seki, Shunichi; Kiguchi, Hiroshi

CORPORATE SOURCE: Technology Platform Research Center, Seiko-Epson Corp., Fujimi-machi, Suwa-gun, Nagano-ken, 339-0293, Japan

SOURCE: MRS Bulletin (2003), 28(11), 821-827
CODEN: MRSBEA; ISSN: 0883-7694

PUBLISHER: Materials Research Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Based on the concept of a microliquid process, we have developed an organic electroluminescent display using conductive polymers, including light-emitting polymers. The technol. of inkjet

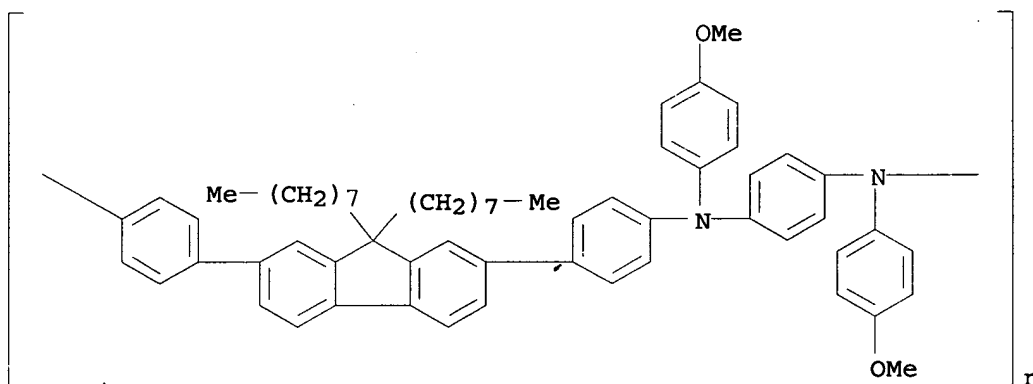
printing has progressed enough to be used for the microliquid process. First, we describe the process used to form a patterned thin film. This involves inkjet-related technologies, the self-patterning behavior of a microliquid on the substrate, and the drying process that defines the thickness profile and film properties. Some microliquid behaviors and related phenomena, along with properties of the resulting film, were identified as distinct from those coming from a macroscopic liquid, as a result of size effects. By fully utilizing these unique properties of microliquids, we have succeeded in fabricating color-pixel arrays by direct patterning of polymer solns. As a result, an organic electroluminescent display with a vivid full-color image was developed.

IT 223569-30-0

(PFMO; inkjet printing of light-emitting polymer displays)

RN 223569-30-0 HCAPLUS

CN Poly[[(4-methoxyphenyl)imino]-1,4-phenylene[(4-methoxyphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 38, 76

IT Electroluminescent **devices**

(displays; inkjet printing of light-emitting polymer displays)

IT 223569-30-0

(PFMO; inkjet printing of light-emitting polymer displays)

IT 223569-28-6

(TFB; inkjet printing of light-emitting polymer displays)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 18 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:644462 HCAPLUS

DOCUMENT NUMBER: 139:188402

TITLE: Organic electroluminescent **devices**
/displays and dendritic complex compounds
therefor

INVENTOR(S): Tokito, Seiji; Tsuzuki, Toshimitsu; Shirasawa,

PATENT ASSIGNEE(S): Nobuhiko; Suzuki, Toshiyasu
 SOURCE: Japan Broadcasting Corp., Japan
 Jpn. Kokai Tokkyo Koho, 16 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: **Patent**
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003231692	A2	20030819	JP 2002-351662	2002 1203

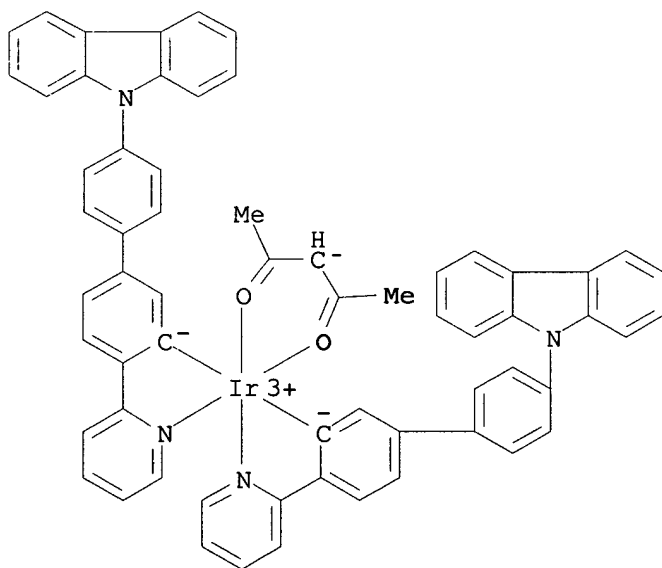
PRIORITY APPLN. INFO.: <--
 JP 2001-370628 A
 2001
 1204

AB Comps. including light-emitting central cores (and hole- or electron-transporting branches), and (full-color) large organic LED including the same in emission layers are sep. claimed. The said cores may have transition (or rare-earth) metal complexes. The LED show long life and high luminescent efficiency.

IT **578715-39-6P**
 (emission layers; organic **electroluminescent devices**/displays and long-life emission materials therefor)

RN 578715-39-6 HCAPLUS

CN Iridium, bis[4'-(9H-carbazol-9-yl)-4-(2-pyridinyl-κN) [1,1'-biphenyl]-3-yl-κC] (2,4-pentanedionato-κO,κO')-(9CI) (CA INDEX NAME)



IC ICM C07F015-00

ICS C09K011-06; H05B033-14; H05B033-22

CC 74-13 (Radiation Chemistry, **Photochemistry**, and

Photographic and Other Reprographic Processes)

Section cross-reference(s): 29, 73

- IT Rare earth complexes
(dendritic, electroluminescent; organic electroluminescent **devices**/displays and long-life emission materials therefor)
- IT Transition metal complexes
(dendritic, electroluminescent; organic electroluminescent **devices**/displays and long-life emission materials therefor)
- IT Electroluminescent **devices**
(displays; organic electroluminescent **devices**/displays and long-life emission materials therefor)
- IT Luminescent substances
(electroluminescent, phosphorescent; organic electroluminescent **devices**/displays and long-life emission materials therefor)
- IT Luminescent screens
(electroluminescent; organic electroluminescent **devices** /displays and long-life emission materials therefor)
- IT Electroluminescent **devices**
(organic electroluminescent **devices**/displays and long-life emission materials therefor)
- IT 578715-38-5P 578715-39-6P 578715-41-0P
578715-43-2P
(emission layers; organic **electroluminescent devices**/displays and long-life emission materials therefor)
- IT 578715-44-3P
(intermediates; del borg. electroluminescent **devices** /displays and long-life emission materials therefor)
- IT 578715-46-5P
(intermediates; reorg. electroluminescent **devices** /displays and long-life emission materials therefor)
- IT 578710-59-5P 578710-61-9P
(ligands; organic electroluminescent **devices**/displays and long-life emission materials therefor)
- IT 52913-19-6P 578710-60-8P
(organic electroluminescent **devices**/displays and long-life emission materials therefor)
- IT 86-74-8, Carbazole 92-66-0, 4-Bromobiphenyl 280-64-8, 9-BBN
1461-22-9, Tributyltin chloride 2039-82-9, 4-Bromostyrene
15702-05-3, Sodium iridium chloride (Na₃IrCl₆) 57102-42-8,
9-(4-Bromophenyl)carbazole 63996-36-1, 2-(4-Bromophenyl)pyridine
(organic electroluminescent **devices**/displays and long-life emission materials therefor)

L31 ANSWER 19 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:426713 HCAPLUS

DOCUMENT NUMBER: 139:252434

TITLE: Red emitting materials for organic EL display

AUTHOR(S): Ichimura, Mari; Ishibashi, Tadashi; Ueda, Naoyuki; Tamura, Shin-ichiro

CORPORATE SOURCE: Organic EL Development, Core Technology & Network Company, Japan

SOURCE: Proceedings of the Sony Research Forum (2002), Volume Date 2001, 11th, 329-334

CODEN: PSRFFO; ISSN: 1340-3508

PUBLISHER: Soni K.K., R & D Senryakubu

DOCUMENT TYPE: Journal; (computer optical disk)

LANGUAGE: English

AB We developed novel distyryl compds. aiming red light-emitting materials for organic EL active panels. Both photoluminescence and electroluminescence spectra have the peaks in the region of 630-650 nm. They have good fluorescence quantum yield(0.8-0.97, in solution), and high glass transition temperature(103-120°C). Use of BSN as an emitting material enables fabrication of fine red EL device that exhibits high luminance efficiency.

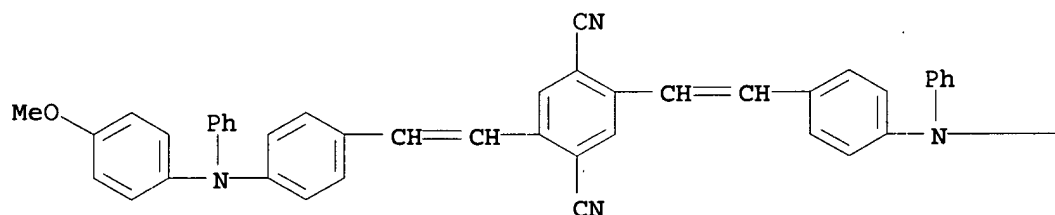
IT 232948-26-4P

(BSB-BCN; red emitting materials for organic EL display)

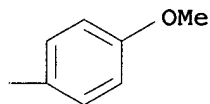
RN 232948-26-4 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 22

IT Electroluminescent devices

(displays; red emitting materials for organic EL display)

IT 232948-26-4P

(BSB-BCN; red emitting materials for organic EL display)

IT 251101-60-7P 253868-91-6P 253868-96-1P

288626-79-9P 288626-80-2P 333339-14-3P

(red emitting materials for organic EL display)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L31 ANSWER 20 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:374064 HCAPLUS

DOCUMENT NUMBER: 138:376535

TITLE: Organic electroluminescent display having red light-emitting layer

INVENTOR(S): Oh, Hyoung Yun; Lee, Sung Koo; Park, Chung Gun; Seo, Jeong Dea; Kim, Myung Seop

PATENT ASSIGNEE(S): LG Electronics Co., Ltd., S. Korea

SOURCE: Jpn. Kokai Tokkyo Koho, 31 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003142269	A2	20030516	JP 2002-293373	2002 1007
KR 2003035283	A	20030509	KR 2001-67267	2001 1030
US 2003118866	A1	20030626	US 2002-254999	2002 0926
EP 1317005	A2	20030604	EP 2002-23135	2002 1015
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CN 1416301	A	20030507	CN 2002-148125	2002 1030

PRIORITY APPLN. INFO.: KR 2001-67267 A
 2001
 1030

OTHER SOURCE(S): MARPAT 138:376535

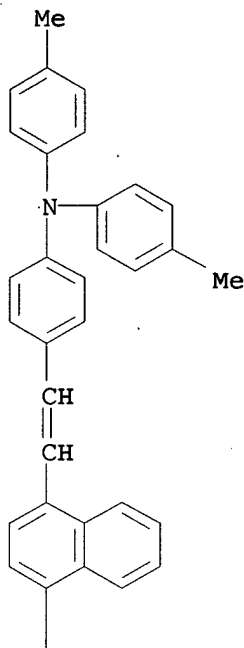
AB The display has a red light-emitting layer between electrodes, and the layer contains a guest substance of red-emitting substance and ≥ 2 host substances. Preferably, one of the host substances is a (substituted) quinoline derivative or a compound represented by (L1L2N)m-z-(NL3L4)n [m + n = 1-8; z = A1, A2QA3; A1 = (substituted) aromatic hydrocarbylene, heterocyclic group, aliphatic hydrocarbylene; A2-3 = (substituted) aromatic hydrocarbylene, heterocyclic group; A1-3 are connected to N via aliphatic hydrocarbylene, amido, or imine; Q = (substituted) aromatic hydrocarbylene, heterocyclic ring, aliphatic hydrocarbylene, Group IIIA, IVA, VA, or VIA element; Q is connected to A2-3 via (substituted) aliphatic hydrocarbylene, Group IIIA, IVA, VA, or VIA element, amido, ester, carbonyl, azo, imine; L1-4 = (substituted) aromatic hydrocarbyl, heterocyclic group, aliphatic hydrocarbyl; silyl, H]. The display emits red light with high luminescent efficiency.

IT 62556-02-9
 (host; organic electroluminescent display having red light-emitting layer containing host substances for high luminescent efficiency)

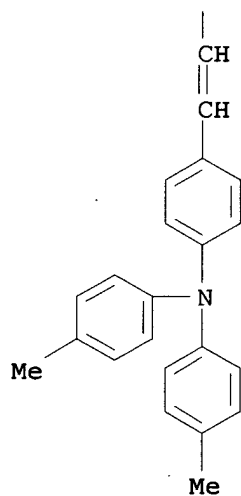
RN 62556-02-9 HCAPLUS

CN Benzenamine, 4,4'-(1,4-naphthalenediyl-di-2,1-ethenediyl)bis[N,N-bis(4-methylphenyl)-(9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



- IC ICM H05B033-14
ICS C09K011-06
CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
IT Electroluminescent **devices**
(displays; organic electroluminescent display having red
light-emitting layer containing host substances for high
luminescent efficiency)
IT 2085-33-8, Alq3 13978-85-3 25387-93-3 **62556-02-9**

67952-28-7, Magnesium 8-hydroxyquinolate 127697-06-7
 127697-08-9 138685-19-5 139255-20-2
 177799-11-0 177799-16-5 220721-66-4 220721-68-6
 223735-42-0 223735-62-4 227013-26-5 252755-19-4
 253867-48-0 340162-05-2 473717-08-7 522652-78-4
 522652-79-5 522652-80-8 522652-81-9 522652-82-0
 522652-83-1 522652-84-2 522652-85-3
 522652-86-4 522652-87-5 522652-88-6
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 522652-98-8 522652-99-9 522653-00-5
 522653-01-6 522653-02-7 522653-03-8
 522653-04-9 522653-05-0 522653-06-1
 522653-07-2 522653-08-3 522653-09-4 522653-10-7
 522653-11-8 522653-12-9 522653-13-0 522653-14-1
 522653-15-2 522653-16-3 522653-17-4 522653-18-5
 522653-19-6 522653-20-9 522653-21-0 522653-22-1

(host; organic **electroluminescent** display having red
light-emitting layer containing host substances
 for high **luminescent** efficiency)

IT 177799-14-3P 227009-35-0P 522652-77-3P 522652-97-7P
 (host; organic **electroluminescent** display having red
light-emitting layer containing host substances
 for high **luminescent** efficiency)

L31 ANSWER 21 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:352229 HCAPLUS

DOCUMENT NUMBER: 138:360465

TITLE: Perylenyl amines for organic
 electroluminescent **devices** and such
devices

INVENTOR(S): Tanaka, Hiroaki; Kanno, Masaki; Yagi, Tamao;
 Toba, Yasumasa

PATENT ASSIGNEE(S): Toyo Ink Mfg. Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 43 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2003129043	A2	20030508	JP 2001-328707	2001 1026

PRIORITY APPLN. INFO.:

<--
 JP 2001-328707

2001
1026

OTHER SOURCE(S): MARPAT 138:360465

AB Ar1NR1R2 [Ar1 = (un)substituted perylenyl; R1-2 = (un)substituted
 aliphatic or aromatic hydrocarbons or heterocycles, with but R1 or R2 =
 Ar2X1NR3R4; Ar2 = (un)substituted aromatic hydrocarbon or
 heterocycle; R3-4 = (un)substituted aliphatic or aromatic hydrocarbons
 or heterocycles; X1 = direct bond, O, S, :CR5R6, :SiR7R8; R5-8 =
 H, (un)substituted aliphatic or aromatic hydrocarbon; either 2 of Ar2,
 X1, R3, and R4 may form ring; either 2 of Ar1, R1, and R2 may form

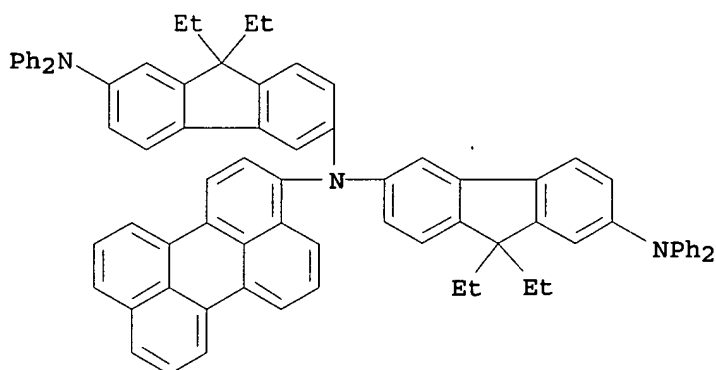
ring] is claimed as a compound for use in electroluminescent devices. Electroluminescent devices including organic or light-emitting layer(s), containing the claimed compd(s)., sandwiched in between a pair of electrodes are also claimed. Devices giving out long-lasting yellow to red light having high intensity are obtained.

IT 519180-39-3

(peryleneamines for organic electroluminescent devices with durable emission of yellow to red light having high intensity)

RN 519180-39-3 HCAPLUS

CN 9H-Fluorene-2,6-diamine, N6-[7-(diphenylamino)-9,9-diethyl-9H-fluoren-3-yl]-9,9-diethyl-N6-3-perylenyl-N2,N2-diphenyl- (9CI)
(CA INDEX NAME)



IC ICM C09K011-06

ICS H05B033-14; C07C211-54; C07C217-92; C07C217-94; C07C323-37;
C07D209-86; C07F007-08

CC 74-13 (Radiation Chemistry, Photochemistry, and
Photographic and Other Reprographic Processes)
Section cross-reference(s): 73

ST org electroluminescent device perylenylamine; yellow
light emitting org electroluminescent device; orange
light emitting org electroluminescent device

IT Electroluminescent devices

(peryleneamines for organic electroluminescent devices
with durable emission of yellow to red light having high
intensity)

IT 519180-16-6P 519180-17-7P 519180-18-8P 519180-19-9P
519180-20-2P

(peryleneamines for organic electroluminescent devices
with durable emission of yellow to red light having high
intensity)

IT 519180-21-3 519180-22-4 519180-23-5 519180-24-6
519180-25-7 519180-26-8 519180-27-9 519180-28-0
519180-29-1 519180-30-4 519180-31-5 519180-32-6
519180-33-7 519180-34-8 519180-35-9 519180-36-0
519180-37-1 519180-38-2 519180-39-3 519180-40-6
519180-41-7 519180-42-8 519180-43-9 519180-44-0
519180-45-1 519180-46-2 519180-47-3 519180-48-4
519180-49-5 519180-50-8 519180-51-9 519180-52-0
519180-53-1

(peryleneamines for organic electroluminescent
devices with durable emission of yellow to red light

having high intensity)
 IT 519180-55-3P
 (peryleneamines for organic electroluminescent devices
 with durable emission of yellow to red light having high
 intensity)
 IT 106-38-7, 4-Bromotoluene 19264-71-2, 9-(4-Chlorophenyl)carbazole
 20492-13-1, 3-Aminoperylene 58047-42-0 167218-38-4
 519180-54-2
 (peryleneamines for organic electroluminescent devices
 with durable emission of yellow to red light having high
 intensity)

L31 ANSWER 22 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:174553 HCAPLUS

DOCUMENT NUMBER: 138:212906

TITLE: Optoelectronic display operating by
 photoluminescence quenching

INVENTOR(S): Smith, Euan Christopher; Gunner, Alec Gordon

PATENT ASSIGNEE(S): Cambridge Display Technology Limited, UK

SOURCE: Brit. UK Pat. Appl., 62 pp.

CODEN: BAXXDU

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2379317	A1	20030305	GB 2001-21077	2001 0830
WO 2003021340	A2	20030313	WO 2002-GB3935	2002 0829
WO 2003021340	A3	20030508		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2004263045	A1	20041230	US 2004-488419	2004 0826
PRIORITY APPLN. INFO.:			GB 2001-21077	A 2001 0830
			WO 2002-GB3935	W 2002

← - -

IT 220797-16-0

RN 220797-16-0 HCAPLUS

Chemical structure of compound 10, a 1,2,3,4-tetrahydronaphthalene derivative. The structure shows a central fused ring system (1,2,3,4-tetrahydronaphthalene) with a methyl group and a $(\text{CH}_2)_7$ chain on the left, and a $(\text{CH}_2)_7$ chain and a 4-(1-ethyl-4-methylphenyl)pyrrolidin-1-yl group on the right.

CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 38, 73, 76

(displays; optoelectronic displays and information displaying methods operating by photoluminescence quenching)

(luminescent blend containing; optoelectronic displays operating by photoluminescence quenching and

employing)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L31 ANSWER 23 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:867322 HCAPLUS
DOCUMENT NUMBER: 137:377521
TITLE: Organic electroluminescent **device**
with high emission efficiency and long service
life, and its display **device**
INVENTOR(S): Matsuura, Mitsunobu; Oshiyama, Tomohiro; Ueda,
Noriko; Yamada, Taketoshi; Kita, Hiroshi
PATENT ASSIGNEE(S): Konica Co., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 41 pp.
CODEN: JKXXAF
DOCUMENT TYPE: **Patent**
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

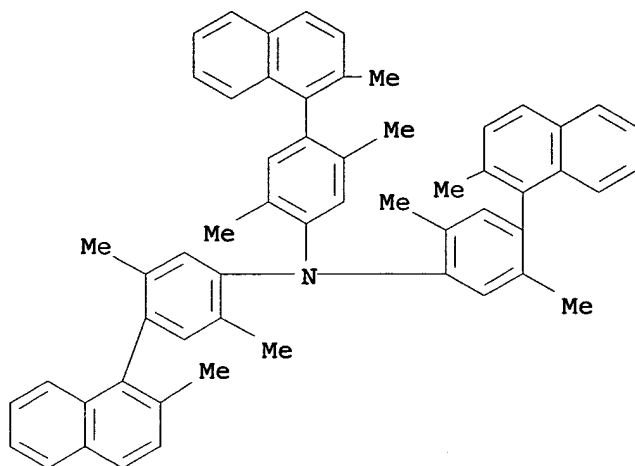
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002329577	A2	20021115	JP 2001-131667	2001 0427

PRIORITY APPLN. INFO.: JP 2001-131667
2001
0427

OTHER SOURCE(S): MARPAT 137:377521
AB The electroluminescent (EL) **device** has a light-emitting
layer containing an organic compound with band gap 2.96-3.80 eV and mol.
weight 600-2000 and a phosphor. The display has (A) the above EL
device or (B) a conversion layer for absorption of the
emission of the above EL **device** and emission with
different maximum wavelength. The use of ≥ 2 EL
devices or conversion layers with different maximum emission
wavelength enables full-color display **devices**. The
display **device** shows low elec. power consumption because
of high emission efficiency to improve service life.

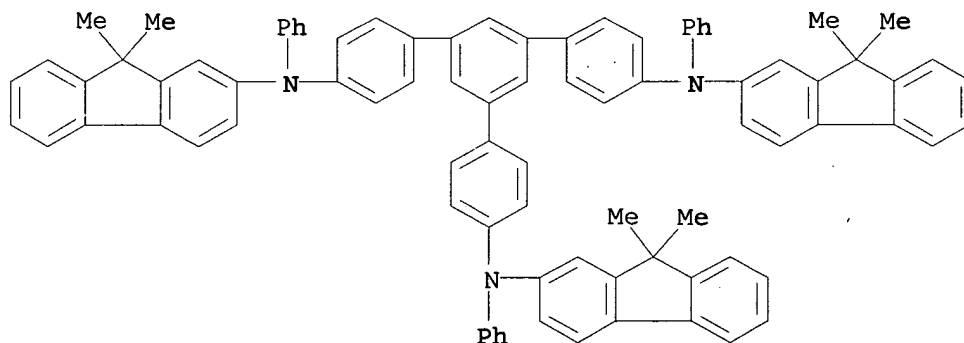
IT 405171-50-8
(light-emitting layer containing; organic
electroluminescent **device** with high emission
efficiency and long service life for full-color display
device)

RN 405171-50-8 HCAPLUS
CN Benzenamine, N,N-bis[2,5-dimethyl-4-(2-methyl-1-
naphthalenyl)phenyl]-2,5-dimethyl-4-(2-methyl-1-naphthalenyl)-
(9CI) (CA INDEX NAME)



- IC ICM H05B033-14
ICS C09K011-06; H05B033-12; H05B033-22
- CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 73
- IT Electroluminescent **devices**
(displays; organic electroluminescent **device** with high emission efficiency and long service life for full-color display **device**)
- IT Luminescent screens
(electroluminescent; organic electroluminescent **device** with high emission efficiency and long service life for full-color display **device**)
- IT Optical filters
(organic electroluminescent **device** with high emission efficiency and long service life for full-color display **device**)
- IT 7789-24-4, Lithium fluoride, uses
(cathode buffer layer; organic electroluminescent **device** with high emission efficiency and long service life for full-color display **device**)
- IT 12254-04-5, Aluminum barium magnesium oxide (Al₁₀BaMgO₁₇)
13778-49-9
(color conversion filter containing; organic electroluminescent **device** with high emission efficiency and long service life for full-color display **device**)
- IT 405171-47-3 405171-49-5 **405171-50-8** 405171-53-1
405171-54-2 405171-87-1 405172-07-8 405172-16-9
405173-85-5 426267-90-5 426267-91-6 426267-92-7
475057-09-1
(**light-emitting** layer containing; organic **electroluminescent device** with high emission efficiency and long service life for full-color display **device**)
- IT 19205-19-7 51325-95-2 144810-07-1
(phosphor, light-emitting layer containing; organic electroluminescent **device** with high emission efficiency and long service life for full-color display **device**)
- L31 ANSWER 24 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:633274 HCAPLUS
 DOCUMENT NUMBER: 138:63760
 TITLE: Development of new hole-transporting amorphous molecular materials with high glass-transition temperatures and their application in thermally stable organic electroluminescent devices
 AUTHOR(S): Okumoto, Kenji; Doi, Hidekaru; Shirota, Yasuhiko
 CORPORATE SOURCE: Department of Applied Chemistry, Faculty of Engineering, Osaka University, Suita, 565-0871, Japan
 SOURCE: Journal of Photopolymer Science and Technology (2002), 15(2), 239-241
 CODEN: JSTEED; ISSN: 0914-9244
 PUBLISHER: Technical Association of Photopolymers, Japan
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB New hole-transporting amorphous mol. materials: 4,4',4''-tris[9,9-dimethylfluoren-2-yl(phenyl)amino]triphenylbenzene (TFAPB), 4,4',4''-tris[9,9-dimethylfluoren-2-yl(4-methylphenyl)amino]triphenylbenzene (MTFAPB), and 4,4',4''-tris[bis(9,9-dimethylfluoren-2-yl)amino]triphenylbenzene (TBFAPB) have been developed. TFAPB, MTFAPB, and TBFAPB exhibit very high glass-transition temps. of 150, 154, and 189° C, resp. These materials permit the fabrication of thermally stable, high-performance organic EL devices.
 IT 479093-18-0P
 (hole-transporting amorphous mol. materials with high glass-transition temps. for thermally stable organic electroluminescent devices)
 RN 479093-18-0 HCAPLUS
 CN [1,1':3',1''-Terphenyl]-4,4''-diamine, N,N'-bis(9,9-dimethyl-9H-fluoren-2-yl)-5'-[4-[(9,9-dimethyl-9H-fluoren-2-yl)phenylamino]phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)



CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 73
 ST hole transport amorphous material org thermally stable electroluminescent device
 IT Electroluminescent devices
 (displays; thermally stable organic electroluminescent devices containing hole-transporting amorphous materials with high glass-transition temps. in relation to)

IT Luminescent screens
(electroluminescent; thermally stable organic electroluminescent **devices** containing hole-transporting amorphous materials with high glass-transition temps. in relation to)

IT Glass transition temperature
Hole transport
(hole-transporting amorphous mol. materials with high glass-transition temps. for thermally stable organic electroluminescent **devices**)

IT Electroluminescent **devices**
(thermally stable organic electroluminescent **devices** containing hole-transporting amorphous materials with high glass-transition temps.)

IT 2085-33-8, Alq3
(electron-transport layer; thermally stable organic electroluminescent **devices** containing hole-transporting amorphous materials with high glass-transition temps.)

IT 479093-18-0P 479093-20-4P 479093-22-6P
(hole-transporting amorphous mol. materials with high glass-transition temps. for thermally stable organic **electroluminescent devices**)

IT 50926-11-9, ITO
(thermally stable organic electroluminescent **devices** containing hole-transporting amorphous materials with high glass-transition temps.)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L31 ANSWER 25 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:609614 HCAPLUS

DOCUMENT NUMBER: 137:161463

TITLE: Aminostyrylphenanthrenes having high luminance
for red-emitting organic electroluminescent
materials, their intermediates, and their
preparation

INVENTOR(S): Ichimura, Mari; Ishibashi, Tadashi; Tamura,
Shinichiro

PATENT ASSIGNEE(S): Sony Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 37 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

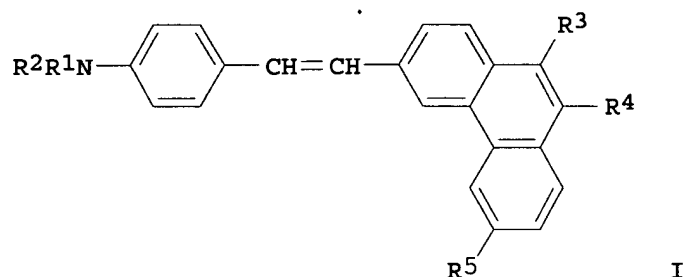
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2002226722	A2	20020814	JP 2001-21006	2001 0130

PRIORITY APPLN. INFO.: <--
JP 2001-21006
2001
0130

OTHER SOURCE(S): MARPAT 137:161463
GI



AB Aminostyrylphenanthrenes shown as I [R1 = (substituted) aryl; R2 = unsubstituted aryl; R3-R5 = H, cyano, hydrocarbyl, etc.] are prepared by condensation of 4-(N,N-diarylamino)benzaldehydes with phosphonic acid esters and/or phosphoniums which are prepared by reacting halogenated phenanthrenes (prepared from phenanthrenes and N-halogenated succinimides) with trialkyl phosphites or PPh3. I are useful for organic electroluminescent material which emit red lights whose maximum emission wavelength can be varied based on substituents introduced to the structures. Moreover, I has high-m.p., good heat resistance, enhanced elec., thermal, or chemical stabilities, are amorphous which easily give glass states, and are sublimable and hence formation of amorphous films by vapor deposition is easy.

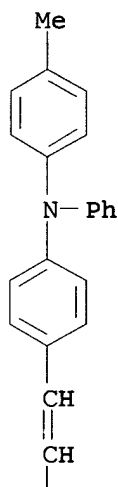
IT 445256-74-6P

(preparation of aminostyrylphenanthrenes having high luminance for red-emitting organic EL materials)

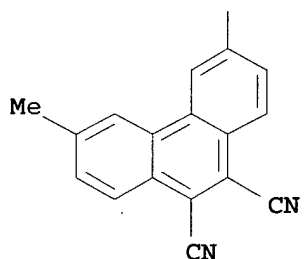
RN 445256-74-6 HCAPLUS

CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



- IC ICM C09B057-00
ICS C07C253-30; C07C255-52; C07C255-58; C07F009-40; C07F009-54;
C09K011-06; H05B033-14
- CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
Section cross-reference(s): 41, 73
- IT Electroluminescent **devices**
Phosphors
(red-emitting; preparation of aminostyrylphenanthrenes having high
luminance for red-emitting organic EL materials)
- IT **445256-74-6P 445256-76-8P 445256-77-9P**
445256-78-0P 445256-82-6P 445256-83-7P
(preparation of aminostyrylphenanthrenes having high
luminance for red-emitting organic EL materials)
- IT **445256-73-5 445256-79-1 445256-80-4**
445256-81-5 445256-84-8 445256-85-9
445256-86-0

(preparation of aminostyrylphenanthrenes having high
luminance for red-emitting organic EL materials)

L31 ANSWER 26 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:553526 HCAPLUS
DOCUMENT NUMBER: 137:132204
TITLE: Organic electroluminescent (EL) elements for
full-color flat displays with high brightness
and durability
INVENTOR(S): Tamura, Shinichiro; Ishibashi, Tadashi;
Ichimura, Mari
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 32 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
JP 2002208488	A2	20020726	JP 2001-4859	2001 0112

PRIORITY APPLN. INFO.: <-- JP 2001-4859
2001
0112

AB The element has an organic layer (including a light-emitting region)
between an anode and a cathode, wherein the organic layer contains an
elec. conductive polymer including a styryl compound (a distyryl
compound, preferably) chemical bonded to the main or side chain of the
polymer.

IT 443971-33-3
(light emitter; organic EL elements
containing elec. conductive polymers having distyryl structures
with high brightness and durability)

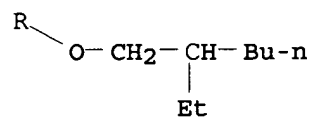
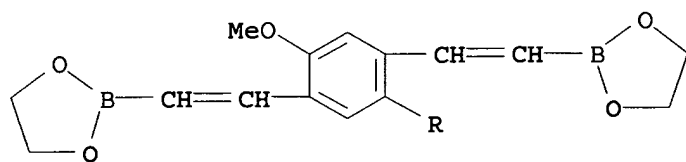
RN 443971-33-3 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2-[2-[4-[[4-[4-[(2-ethylhexyl)oxy]-2,5-
diiodophenoxy]phenyl]-1-naphthalenylamino]phenyl]ethenyl]-5-[2-[4-
(1-naphthalenylphenylamino)phenyl]ethenyl]-, polymer with
1-[(2-ethylhexyl)oxy]-2,5-diiodo-4-methoxybenzene and
2,2'-[[2-[(2-ethylhexyl)oxy]-5-methoxy-1,4-phenylene]di-2,1-
ethenediyl]bis[1,3,2-dioxaborolane] (9CI) (CA INDEX NAME)

CM 1

CRN 443971-32-2

CMF C23 H34 B2 O6

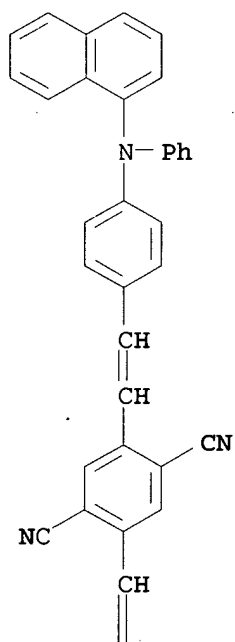


CM 2

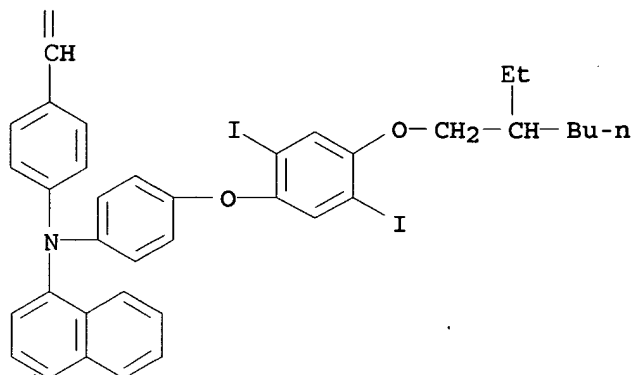
CRN 443971-31-1

CMF C70 H56 I2 N4 O2

PAGE 1-A



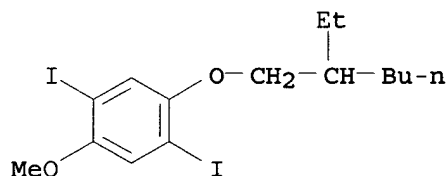
PAGE 2-A



CM 3

CRN 262355-67-9

CMF C15 H22 I2 O2



IC ICM H05B033-14

ICS C09K011-06

CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 73

IT Optical imaging **devices**(flat, full-color, elements for; organic EL elements containing elec.
conductive polymers having distyryl structures with high
brightness and durability)IT Electroluminescent **devices**(organic EL elements containing elec. conductive polymers having
distyryl structures with high brightness and durability)

IT 443971-33-3 443971-35-5 443971-37-7

443971-39-9 443971-41-3 443971-43-5

(light emitter; organic EL elements
containing elec. conductive polymers having distyryl structures
with high brightness and durability)

L31 ANSWER 27 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:486473 HCAPLUS

DOCUMENT NUMBER: 137:70569

TITLE: Thin organic electroluminescent display
devices equipped with color filters
prepared by vapor deposition

INVENTOR(S): Arai, Michio; Aoyama, Megumi; Nakano, Mutsuko

PATENT ASSIGNEE(S): TDK Corporation, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 32 pp.

DOCUMENT TYPE: CODEN: JKXXAF
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: 1 Japanese
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002184575	A2	20020628	JP 2000-376304	2000 1211

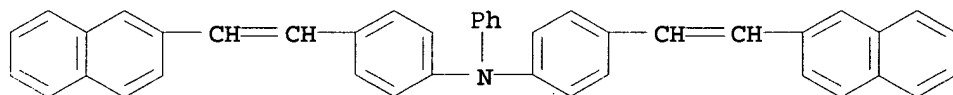
PRIORITY APPLN. INFO.: <-- JP 2000-376304
 2000
 1211

AB The **devices** comprise a substrate equipped with a non-single crystalline Si switching element and multiple nos. of organic electroluminescent **devices**, each comprising a pair of electrodes, at least one of which is transparent, ≥ 1 organic light-emitting layer, and a color filter layer prepared by vacuum deposition of pigments and/or organic dyes. The **devices** can be manufactured at low cost.

IT 350230-48-7
 (hole transporter; thin organic **electroluminescent** display **devices** with color filters prepared by vapor deposition of organic dyes and/or pigments)

RN 350230-48-7 HCAPLUS

CN Benzenamine, 4-[2-(2-naphthalenyl)ethenyl]-N-[4-[2-(2-naphthalenyl)ethenyl]phenyl]-N-phenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-12
 ICS H05B033-12; C23C014-12; C23C014-24; G02B005-20; G09F009-30;
 H05B033-08; H05B033-14

CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)

ST org electroluminescent **device** thin; vapor deposition
 color filter org electroluminescent **device**

IT Electroluminescent **devices**

Optical filters

Vapor deposition process

(passivation layer; thin organic electroluminescent display **devices** with color filters prepared by vapor deposition of organic dyes and/or pigments)

IT 2085-33-8, Alq3

(charge transporter; thin organic electroluminescent display **devices** with color filters prepared by vapor deposition of organic dyes and/or pigments)

IT 260550-65-0

(hole injection layer; thin organic electroluminescent display **devices** with color filters prepared by vapor deposition of organic dyes and/or pigments)

IT 65181-78-4
(hole transportation layer; thin organic electroluminescent display **devices** with color filters prepared by vapor deposition of organic dyes and/or pigments)

IT 350230-48-7
(hole transporter; thin organic **electroluminescent** display **devices** with color filters prepared by vapor deposition of organic dyes and/or pigments)

IT 7631-86-9, Silicon oxide, uses 12033-89-5, Silicon nitride, uses 107875-71-8, Silicon oxide (SiO_{1.8})
(passivation layer; thin organic electroluminescent display **devices** with color filters prepared by vapor deposition of organic dyes and/or pigments)

IT 517-51-1, Rubrene
(phosphorescent substance in electroluminescent layer; thin organic electroluminescent display **devices** with color filters prepared by vapor deposition of organic dyes and/or pigments)

IT 7440-21-3, Silicon, uses 84632-65-5, Pigment Red 254
152728-98-8 374918-04-4
(pigment; thin organic electroluminescent display **devices** with color filters prepared by vapor deposition of organic dyes and/or pigments)

L31 ANSWER 28 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:349431 HCAPLUS

DOCUMENT NUMBER: 136:377566

TITLE: Red organic electroluminescence elements with good color stability and high brightness for displays

INVENTOR(S): Ishibashi, Tadashi; Ichimura, Mari; Tamura, Shinichiro; Ueda, Naoyuki

PATENT ASSIGNEE(S): Sony Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 31 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002134276	A2	20020510	JP 2000-329902	2000 1030
WO 2003091357	A1	20031106	WO 2002-JP4097	2002 0424
<--				
W: CN, KR, SG, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
EP 1498465	A1	20050119	EP 2002-722757	2002 0424
<--				
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				

US 2004202891

A1

20041014

US 2003-297017

2003
0520

PRIORITY APPLN. INFO.:

JP 2000-329902

A

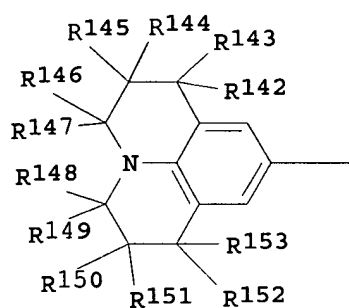
2000
1030

WO 2002-JP4097

W

2002
0424OTHER SOURCE(S):
GI

MARPAT 136:377566



I

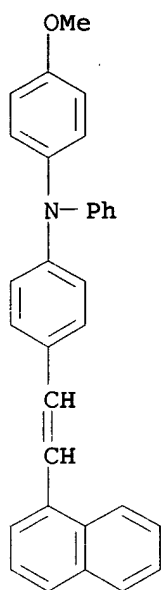
AB The electroluminescence (EL) elements contain aminostyryl compds. Y1CH:CHX1CH:CHY2 and/or Y3CH:CHX2 [X1 = substituted anthracenylene (substituent = halo, nitro, cyano, CF₃, etc.); X2 = (un)substituted Ph, naphthalenyl, anthracenyl, phenanthrenyl, pyrenyl (substituent = H, halo, nitro, cyano, CF₃); Y1-3 = H, alkyl, aryl that may contain C₆H₄NZ₁Z₂, I, or (un)substituted Ph; Z₁, Z₂ = H, alkyl, aryl; R142-153 = H, alkyl, aryl, alkoxy, halo, etc.].

IT 101247-14-7

(red organic EL elements with good color stability and high brightness for displays)

RN 101247-14-7 HCAPLUS

CN Benzenamine, 4-methoxy-N-[4-[2-(1-naphthalenyl)ethenyl]phenyl]-N-phenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14
 ICS C09K011-06; H05B033-22
 CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
 Section cross-reference(s): 73
 IT Electroluminescent **devices**
 (red-emitting; red organic EL elements with good color stability
 and high brightness for displays)
 IT 101247-14-7 127697-16-9 253869-00-0
 261632-47-7 261632-87-5 321709-39-1
 321735-48-2 321735-63-1 422510-46-1
 422510-49-4 422510-67-6 422510-70-1
 422510-72-3 422510-75-6 422510-76-7
 422510-78-9 422510-81-4 422510-83-6
 422510-84-7 422510-85-8
 (red organic EL elements with good color stability and
 high brightness for displays)

L31 ANSWER 29 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:273078 HCAPLUS

DOCUMENT NUMBER: 136:286734

TITLE: Electrically conductive elements and organic
 electroluminescent **devices** using
 them with improved light-emitting efficiency
 and durability

INVENTOR(S): Okada, Shinjiro; Tsuboyama, Akira; Moriyama,
 Takashi; Kamatani, Atsushi; Takiguchi, Takao;
 Mizutani, Hidemasa

PATENT ASSIGNEE(S): Canon Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002110352	A2	20020412	JP 2000-298024	2000 0929

PRIORITY APPLN. INFO.:

<-- JP 2000-298024

2000
0929

AB The element, useful for a flat panel display, a projection display, and a printer, contains 2 opposed electrodes and 2 organic compound layers (containing different conduction carriers) laminated via heterojunction surface between the electrodes, wherein surface roughness of the heterojunction surface is different from that of at least one of the inner surface of the electrodes.

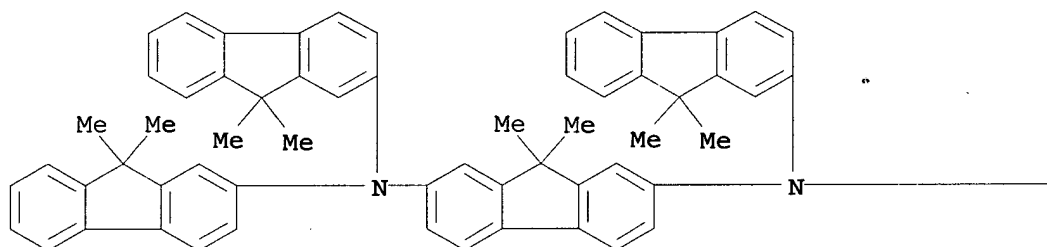
IT 216454-35-2

(pos. hole-transporting layer; organic EL displays having heterojunction surface with controlled roughness for improving light-emitting efficiency and durability)

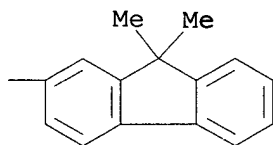
RN 216454-35-2 HCAPLUS

CN 9H-Fluorene-2,7-diamine, N,N,N',N'-tetrakis(9,9-dimethyl-9H-fluoren-2-yl)-9,9-dimethyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM H05B033-14

ICS C09K011-06

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73, 76

ST elec conductive element org EL durability; org electroluminescent

device heterojunction surface roughness; light emitting efficiency org electroluminescent display

IT Electric conductors
Electroluminescent **devices**
(organic; organic EL displays having heterojunction surface with controlled roughness for improving light-emitting efficiency and durability)

IT 123847-85-8, α -NPD 216454-35-2
(pos. hole-transporting layer; organic **EL** displays having heterojunction surface with controlled roughness for improving **light-emitting** efficiency and durability)

L31 ANSWER 30 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:27765 HCAPLUS

DOCUMENT NUMBER: 136:110192

TITLE: Red-emitting organic electroluminescent **devices** with high electric energy conversion efficiency and color purity

INVENTOR(S): Tominaga, Takeshi; Murase, Seiichiro; Kohama, Toru

PATENT ASSIGNEE(S): Toray Industries, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2002008862	A2	20020111	JP 2000-184268	2000 0620

PRIORITY APPLN. INFO.: <-- JP 2000-184268

2000
0620

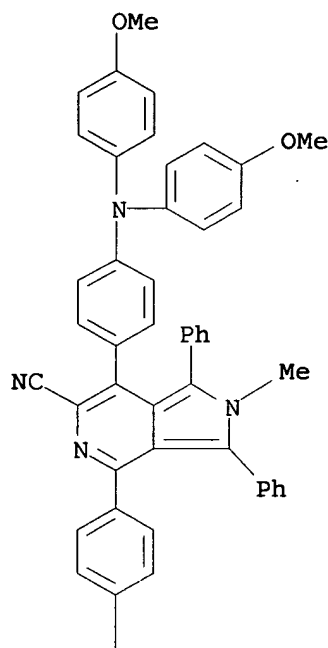
AB The **devices** having emission peak at 580-750 nm, contain fluorescent substances having fluorescent peak at 540-750 nm and condensed heterocyclic compds. (which may be dopants), between anodes and cathodes. The compds. may have polar groups, vinyl groups, aromatic rings, and/or heterocyclic rings. The **devices** are useful for matrix-type displays (e.g., computers, televisions) and segment-type displays (e.g., clocks, thermometers).

IT 388094-37-9
(dopant; red-emitting organic **electroluminescent devices** containing condensed heterocyclic dopants with high elec. energy conversion efficiency and color purity)

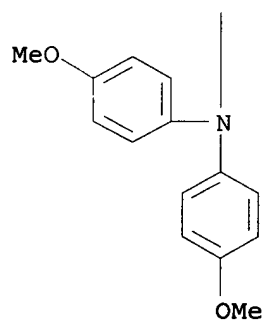
RN 388094-37-9 HCAPLUS

CN 2H-Pyrrolo[3,4-c]pyridine-6-carbonitrile, 4,7-bis[4-[bis(4-methoxyphenyl)amino]phenyl]-2-methyl-1,3-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



- IC ICM H05B033-14
ICS C07D333-20; C07D471-04; C07D471-16; C09K011-06; C07D241-42
CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
ST red emitting org electroluminescent **device** display;
condensed heterocyclic compd dopant red LED; phenylquinolinolato
host LED active matrix display
IT Electroluminescent **devices**
(red-emitting; red-emitting organic electroluminescent
devices containing condensed heterocyclic dopants with high
elec. energy conversion efficiency and color purity)
IT 50926-11-9, ITO
(anode; red-emitting organic electroluminescent **devices**
containing condensed heterocyclic dopants with high elec. energy

- conversion efficiency and color purity)
- IT 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses (cathode; red-emitting organic electroluminescent **devices** containing condensed heterocyclic dopants with high elec. energy conversion efficiency and color purity)
- IT 14640-21-2, Magnesium tetraphenylporphyrin 388094-37-9 388094-38-0 388094-39-1 (dopant; red-emitting organic **electroluminescent devices** containing condensed heterocyclic dopants with high elec. energy conversion efficiency and color purity)
- IT 82953-57-9 119273-55-1, 2,5-Dihydro-3,6-bis(2-methoxyphenyl)-2,5-dimethylpyrrolo[3,4-c]pyrrole-1,4-dione 145983-47-7 162845-44-5 184679-91-2 269408-24-4 362623-43-6, Tris(5,7-diphenyl-8-quinolinolato)aluminum 388092-92-0 388119-20-8 (host material; red-emitting organic electroluminescent **devices** containing condensed heterocyclic dopants with high elec. energy conversion efficiency and color purity)
- IT 65181-78-4, TPD (pos. hole-transporting agent; red-emitting organic electroluminescent **devices** containing condensed heterocyclic dopants with high elec. energy conversion efficiency and color purity)

L31 ANSWER 31 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:928300 HCAPLUS

DOCUMENT NUMBER: 137:85799

TITLE: Energy transfer to porphyrin derivative dopants in polymer light-emitting diodes

AUTHOR(S): Higgins, R. W. T.; Monkman, A. P.; Nothofer, H.-G.; Scherf, U.

CORPORATE SOURCE: Department of Physics, University of Durham, Durham, DH1 3LE, UK

SOURCE: Journal of Applied Physics (2002), 91(1), 99-105

CODEN: JAPIAU; ISSN: 0021-8979

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

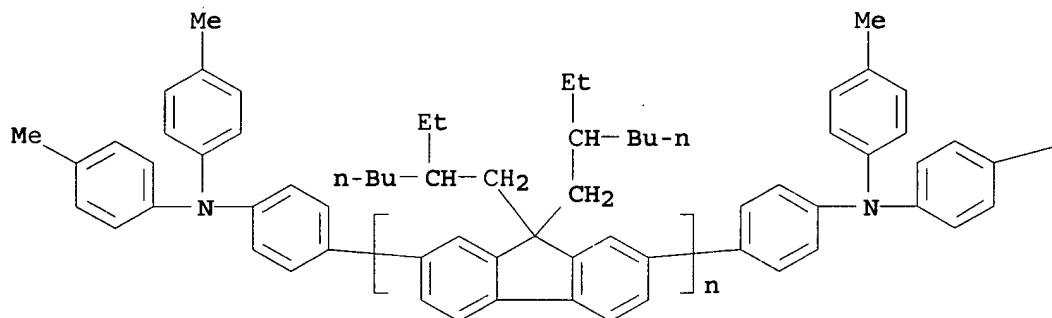
LANGUAGE: English

AB The **device** physics of bilayer polymer light-emitting diodes that utilize energy transfer to various porphyrin derivs. were investigated. The emissive host, α,ω -bis[N,N-di(4-methylphenyl)aminophenyl]-poly(9,9-bis(2-ethylhexyl)fluorene-2,7-diyl) (PF2/6am4), was doped to a variety of concns. between 0.5 and 4 weight% with 2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphyrin zinc(II) (ZnOEP), 2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphyrin palladium(II) (PdOEP), and 2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphyrin platinum(II) (PtOEP). The electroluminescent **devices** showed a maximum external quantum efficiency (EQE) of 1.19%, 0.22%, 1.08%, and 2.75% for undoped APFO, PF2/6am4:ZnOEP, PF2/6am4:PtOEP, and PF2/6am4:PtOEP blends, resp. This variation in performance of the blends was attributed to be a product of both the luminescence quantum yield of the dopant mols., which was taken from the literature as 0.065, 0.2, and 0.5 for ZnOEP, PdOEP, and PtOEP, resp., and the dopant excited state lifetime. It was observed that at high brightness the EQE of the doped **devices** falls below that of the undoped **device** and we attribute this high-end falloff in performance to the excited state lifetimes of the dopant mols., which determine at which c.d.

devices exhibit peak efficiency. Past this peak in efficiency, it is proposed that saturation of the dopant sites is the major factor in detrimental device performance, which has wide reaching consequences for any future design that utilizes energy transfer of dopant mols.

IT 286438-46-8
(energy transfer to porphyrin derivative dopants in polymer light-emitting diodes)
RN 286438-46-8 HCAPLUS
CN Poly[9,9-bis(2-ethylhexyl)-9H-fluorene-2,7-diyl],
 α,ω -bis[4-[bis(4-methylphenyl)amino]phenyl]- (9CI)
(CA INDEX NAME)

PAGE 1-A



PAGE 1-B

— Me

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
IT Electric current-potential relationship
Electroluminescent devices
Energy transfer
Luminescence, electroluminescence
(energy transfer to porphyrin derivative dopants in polymer light-emitting diodes)
IT 9003-53-6D, Polystyrene, sulfonated acid derivative 17632-18-7, Zinc octaethylporphyrin 24804-00-0, Palladium octaethylporphyrin 31248-39-2, Platinum octaethylporphyrin 50926-11-9, Indium tin oxide 126213-51-2, Poly(3,4-ethylenedioxythiophene)
286438-46-8
(energy transfer to porphyrin derivative dopants in polymer light-emitting diodes)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 32 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:823340 HCAPLUS
DOCUMENT NUMBER: 135:364614
TITLE: Triphenylamine, carbazole, or triphenylbenzene
derivatives and electroluminescent
devices using them
INVENTOR(S): Shiota, Yasuhiko
PATENT ASSIGNEE(S): Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: **Patent**
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001316338	A2	20011113	JP 2000-71723	2000 0315
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PRIORITY APPLN. INFO.:			JP 2000-51209	A 2000 0228
			<--	
OTHER SOURCE(S):	MARPAT 135:364614			
GI				

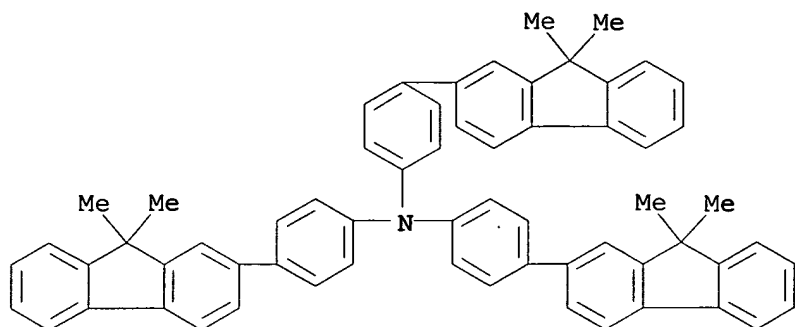
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

AB Triphenylamine derivs. I (R1, R2 = substituent), carbazole derivs.
II (R1, R2 = substituent), and triphenylbenzene derivs. III (R1,
R2 = substituent) are claimed. Also claimed are
electroluminescent **devices** having a hole injection layer
containing I, II, or III. The electroluminescent **devices**
show high luminescence intensity, high luminescence efficiency,
and high heat resistance.

IT 372190-66-4
(triphenylamine, carbazole, or triphenylbenzene derivs. for
hole injection layer of heat-resistant
electroluminescent devices)

RN 372190-66-4 HCAPLUS

CN Benzenamine, 4-(9,9-dimethyl-9H-fluoren-2-yl)-N,N-bis[4-(9,9-
dimethyl-9H-fluoren-2-yl)phenyl]- (9CI) (CA INDEX NAME)



- IC ICM C07C211-54
ICS C07C211-61; H05B033-14; H05B033-22
- CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 25
- ST triphenylamine deriv hole injection layer electroluminescent **device**; carbazole deriv hole injection layer electroluminescent **device**; triphenylbenzene deriv hole injection layer electroluminescent **device**
- IT Electroluminescent **devices**
(triphenylamine, carbazole, or triphenylbenzene derivs. for hole injection layer of heat-resistant electroluminescent **devices**)
- IT 148044-16-0, 1,3,5-Tris(4-tert-butylphenyl-1,3,4-oxadiazolyl)benzene
(electron transport layer; triphenylamine, carbazole, or triphenylbenzene derivs. for hole injection layer of heat-resistant electroluminescent **devices**)
- IT 2085-33-8, Tris(8-quinolinolato)aluminum
(luminescent layer; triphenylamine, carbazole, or triphenylbenzene derivs. for hole injection layer of heat-resistant electroluminescent **devices**)
- IT 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-(1,1'-biphenyl)-4,4'-diamine 123847-85-8 134008-76-7 144726-87-4
145693-79-4 153521-90-5, 1,3,5-Tris[N-(4-diphenylaminophenyl)phenylamino]benzene 169224-62-8
198639-41-7, Tri(o-terphenyl-4-yl)amine 372190-64-2
372190-65-3 **372190-66-4**
(triphenylamine, carbazole, or triphenylbenzene derivs. for hole injection layer of heat-resistant electroluminescent **devices**)

L31 ANSWER 33 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:754109 HCAPLUS

DOCUMENT NUMBER: 135:311045

TITLE: Aminostyrylanthracene compound, synthetic intermediate for the compound, and manufacture of the compound and the intermediate

INVENTOR(S): Ichimura, Masatada; Ishibashi, Tadashi; Tamura, Shinichiro

PATENT ASSIGNEE(S): Sony Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 62 pp.

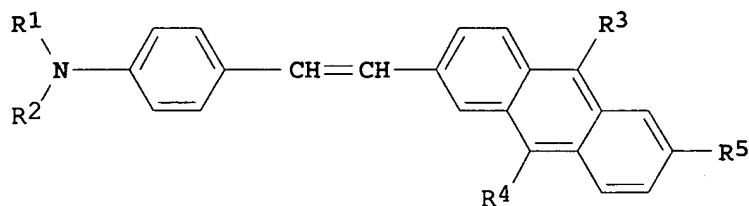
CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

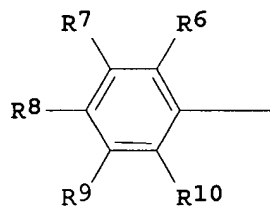
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001288377	A2	20011016	JP 2000-104582	2000 0406
WO 2001077065	A1	20011018	WO 2001-JP3003	2001 0406
EP 1191015	A1	20020327	EP 2001-917850	2001 0406
US 2003149290	A1	20030807	US 2002-980323	2002 0319
US 2003208089	A1	20031106	US 2003-431882	2003 0508
US 2003229242	A1	20031211	US 2003-431691	2003 0508
PRIORITY APPLN. INFO.:				
			JP 2000-104582	A 2000 0406
			WO 2001-JP3003	W 2001 0406
			US 2002-980323	A3 2002 0319
OTHER SOURCE(S):				
GI	MARPAT 135:311045			



I



II

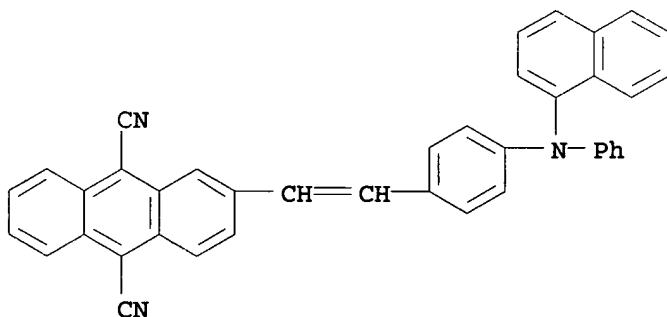
AB The aminostyrylanthracene compound is that represented as I [R1 = aryl group II; R2 = aryl; R3, R4 = H, cyano, fluoroalkyl, NO2, halogen; R5 = H, C \geq 1 (saturated) hydrocarbyl, (substituted) aryl; R6-R10 = H, C \geq 1 (saturated) hydrocarbyloxy, hydrocarbyl, hydrocarbylamino, fluoroalkyl, (substituted) aryl], etc. The compound is manufactured by condensation of aminobenzaldehyde and the claimed anthracene phosphonate ester, preferably by Wittig-Horner or Wiggig reaction. The phosphonate ester is manufactured by reaction of a halogenated aryl compound and trialkyl phosphite or PPh₃. The yellow to red light-emitting compound is suitable for an electroluminescent display device.

IT 321735-48-2P

(aminostyrylanthracene compound as **electroluminescent** phosphor manufactured from anthracene phosphonate and aminobenzaldehyde)

RN 321735-48-2 HCAPLUS

CN 9,10-Anthracenedicarbonitrile, 2-[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



IC ICM C09B001-00

ICS C07C209-78; C07C211-54; C07C213-08; C07C217-92; C07C253-30;
C07C255-52; C07C255-58; C07F009-40; C09B057-00; C09K011-06;
H05B033-14

CC 74-13 (Radiation Chemistry, Photochemistry, and
Photographic and Other Reprographic Processes)
IT Electroluminescent devices
Wittig reaction
(aminostyrylanthracene compound as electroluminescent phosphor
manufactured from anthracene phosphonate and aminobenzaldehyde)

IT 111651-30-0P 321735-48-2P 321735-49-3P
321735-50-6P 321735-51-7P 366793-10-4P
366793-12-6P 366793-14-8P 366793-16-0P
366793-18-2P 366793-19-3P 366793-20-6P
366793-21-7P 366793-22-8P 366793-23-9P
366793-24-0P 366793-25-1P 366793-26-2P
366793-27-3P 366793-28-4P 366793-29-5P
366793-30-8P 366793-31-9P 366793-32-0P
366793-33-1P 366793-34-2P 366793-35-3P
366793-36-4P 366793-37-5P 366793-38-6P
366793-39-7P 366793-40-0P 366793-41-1P
366793-42-2P 366793-43-3P 366793-44-4P
(aminostyrylanthracene compound as electroluminescent
phosphor manufactured from anthracene phosphonate and
aminobenzaldehyde)

L31 ANSWER 34 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:626018 HCAPLUS

DOCUMENT NUMBER: 135:187696

TITLE: Electroluminescent device containing
new electron transport substance for improving
luminescent properties, heat-resistance, and
durability

INVENTOR(S): Shiota, Yasuhiko

PATENT ASSIGNEE(S): Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE:

Patent

LANGUAGE:

Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001233882	A2	20010828	JP 2000-51210	

2000
0228

PRIORITY APPLN. INFO.:

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JP 2000-51210

2000
0228

AB The invention relates to an electroluminescent display
device which contains 1,3,5-tris[5-(dimethylboryl)-2-
thienyl]benzene in an electron transport layer. The
electroluminescent display device contains
tris(p-terphenyl-4-yl)amine in a luminescent layer. The
electroluminescent display device contains an organic
compound selected from 4,4',4''-tris(3-methylphenylphenylamino)triphenylamine,
4,4',4''-tris(1-naphthylphenylamino)triphenylamine,
4,4',4''-tris(2-naphthylphenylamino)triphenylamine,
4,4',4''-tris[biphenyl-2-yl(phenyl)amino]triphenylamine,
4,4',4''-tris[biphenyl-3-yl(phenyl)amino]triphenylamine,

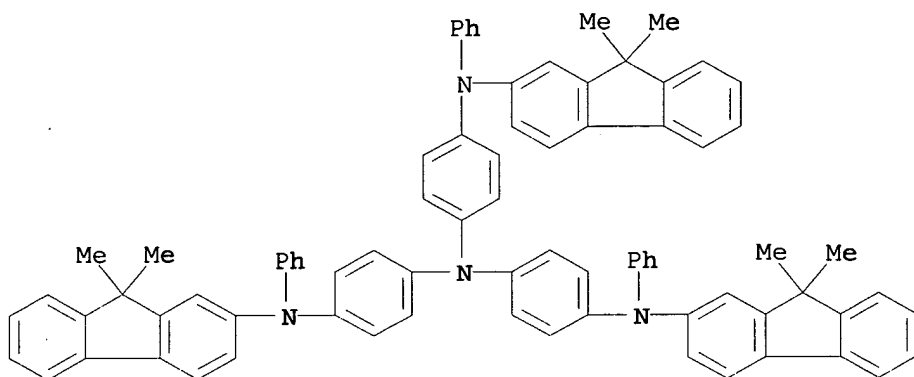
4,4',4''-tris[biphenyl-4-yl(3-methylphenyl)amino]triphenylamine, and 4,4',4''-tris[9,9-dimethyl-2-fluorenyl(phenyl)amino]triphenylamine in a pos. hole injection layer. The electroluminescent device is suitable for blue- and full color-flat panel displays.

IT 303111-06-0P

(preparation of compound useful for pos. hole injection layer of electroluminescent device)

RN 303111-06-0 HCAPLUS

CN 1,4-Benzenediamine, N-(9,9-dimethyl-9H-fluoren-2-yl)-N'-bis[4-[(9,9-dimethyl-9H-fluoren-2-yl)phenylamino]phenyl]-N-phenyl- (9CI)
(CA INDEX NAME)



IC ICM C07F005-02

ICS C07C211-54; C07D221-18; C09K011-06; H05B033-14; H05B033-22

CC 74-3 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 73

IT Electroluminescent **devices**

(electroluminescent **device** containing new electron transport substance for improving luminescent properties, heat-resistance, and durability)

IT 355832-02-9P

(electron transport substance in electroluminescent **device** with improved luminescent properties, heat-resistance, and durability)

IT 145693-79-4P

(in luminescent layer; electroluminescent **device** containing new electron transport substance for improving luminescent properties, heat-resistance, and durability)

IT 124729-98-2P, 4,4',4''-Tris(3-methylphenylphenylamino)triphenylamine

(in pos. hole injection layer; electroluminescent **device** containing new electron transport substance for improving luminescent properties, heat-resistance, and durability)

IT 92-66-0, 4-Bromobiphenyl

(preparation of compound useful for luminescent layer of electroluminescent **device**)

IT 185690-39-5P 185690-41-9P, 4,4',4''-Tris(2-naphthylphenylamino)triphenylamine 214545-00-3P 281678-62-4P
281678-63-5P 303111-06-0P

(preparation of compound useful for pos. hole injection layer of electroluminescent **device**)

- IT 90-30-2, N-Phenyl-1-naphthylamine 135-88-6, N-Phenyl-2-naphthylamine 1205-64-7, N-(3-Methylphenyl)aniline 4181-20-8, Tris(4-iodophenyl)amine 35887-50-4 198275-79-5 355832-03-0 355832-04-1
(preparation of compound useful for pos. hole injection layer of electroluminescent **device**)
- IT 436-59-9, Dimesitylboronfluoride 15509-95-2, 1,3,5-Tris(2-thienyl)benzene
(preparation of electron transport substance for electroluminescent **device**)

L31 ANSWER 35 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:621500 HCAPLUS

DOCUMENT NUMBER: 135:350420

TITLE: Photophysical studies on organic thin solid films

AUTHOR(S): Murase, Seiichiro; Makiyama, Aki; Tominaga, Tsuyoshi; Kohama, Akira; Oka, Tetsuo

CORPORATE SOURCE: Electronic and Imaging Materials Research Laboratories, Toray Industries, Inc., Otsu, 520-0842, Japan

SOURCE: Journal of Photopolymer Science and Technology (2001), 14(2), 313-316

CODEN: JSTEED; ISSN: 0914-9244

PUBLISHER: Technical Association of Photopolymers, Japan

DOCUMENT TYPE: Journal

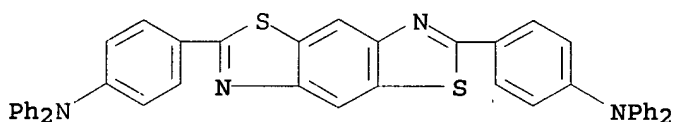
LANGUAGE: English

AB In the present paper the photoluminescence (PL) quantum yields, and some other PL properties of some common and originally synthesized organic materials in solid films were studied. The films include both single and composite layers molecularly doped with highly fluorescent dyes. Some developments in red organic light-emitting diodes with high performance are also shown.

IT 219596-73-3
(photophys. studies on organic thin solid films in relation to organic **light-emitting devices**)

RN 219596-73-3 HCAPLUS

CN Benzenamine, 4,4'-benzo[1,2-d:4,5-d']bisthiazole-2,6-diylbis[N,N-diphenyl- (9CI) (CA INDEX NAME)



CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)

ST org thin doped film photoluminescence quantum yield electroluminescent **device**; red electroluminescent org thin doped film **device**; concn quenching photoluminescence org thin doped film

IT Luminescence quenching

(concentration; photophys. studies on organic thin solid films in relation to organic light-emitting **devices**)

IT Luminescence

Optical imaging **devices**

(photophys. studies on organic thin solid films in relation to organic light-emitting **devices**)

IT Electroluminescent **devices**
 (red-emitting; photophys. studies on organic thin solid films in relation to organic light-emitting **devices**)

IT 50926-11-9, Indium tin oxide 65181-78-4, TPD
 (photophys. studies on organic thin solid films in relation to organic light-emitting **devices**)

IT 2085-33-8, Alq3 85642-11-1, Coumarin 545 99762-78-4
 159788-00-8 194214-31-8 **219596-73-3**
 (photophys. studies on organic thin solid films in relation to organic **light-emitting devices**)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 36 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:603530 HCAPLUS

DOCUMENT NUMBER: 135:187795

TITLE: New amine compound for organic electroluminescent **device** showing longer luminescent lifetime and excellent durability

INVENTOR(S): Shimamura, Takehiko; Nakatsuka, Masakatsu; Ishida, Tsutomu

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 75 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

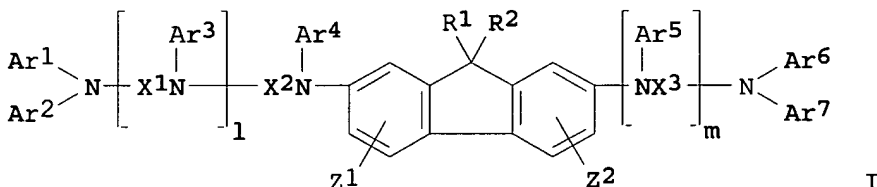
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001226331	A2	20010821	JP 2000-34477	2000 0214

PRIORITY APPLN. INFO.: JP 2000-34477
 2000
 0214

OTHER SOURCE(S): MARPAT 135:187795
 GI



AB The new amine compound is represented by a general formula I (Ar1-7 = aryl; R1, R2 = H, alkyl, aryl, aralkyl; Z1, Z2 = H, halo, alkyl, alkoxy, aryl; X1-3 = arylene; 1, m = 0, 1) and synthesized. The amine compound is suitable as a pos. hole injection transport

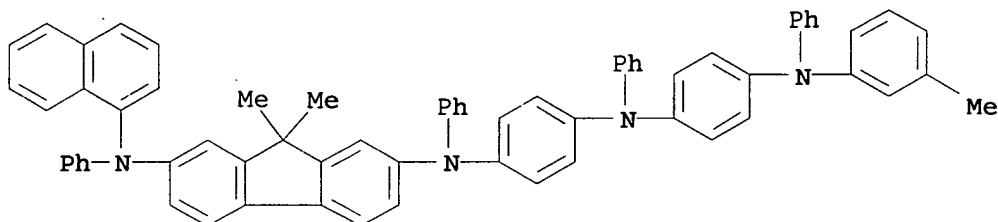
material in an organic electroluminescent display device.

IT 354987-33-0

(amine compound for organic electroluminescent device showing longer luminescent lifetime and excellent durability)

RN 354987-33-0 HCAPLUS

CN 9H-Fluorene-2,7-diamine, 9,9-dimethyl-N-[4-[[4-[(3-methylphenyl)phenylamino]phenyl]phenylamino]phenyl]-N'-1-naphthalenyl-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IC ICM C07C211-61

ICS C07C217-94; C07D209-86; C07D213-74; C07D265-38; C07D279-26; C07D333-36; C09K011-06; H05B033-14; H05B033-22

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 73

ST amine compd synthesis pos hole injection transport material; electroluminescent display device amine compd charge transport material

IT Electroluminescent devices

(amine compound for organic electroluminescent device showing longer luminescent lifetime and excellent durability)

IT 354987-33-0 354987-34-1 354987-35-2

354987-37-4 354987-38-5 354987-40-9

354987-41-0 354987-44-3 354987-45-4

354987-48-7 354987-49-8 354987-51-2

354987-53-4 354987-54-5 354987-56-7

354987-57-8 354987-59-0 354987-60-3

354987-61-4 354987-63-6 354987-64-7

354987-65-8 354987-66-9 354987-69-2

354987-70-5 354987-72-7 354987-73-8

(amine compound for organic electroluminescent device showing longer luminescent lifetime and excellent durability)

IT 354987-31-8P 354987-32-9P 354987-36-3P

354987-39-6P 354987-42-1P 354987-43-2P

354987-46-5P 354987-47-6P 354987-50-1P

354987-52-3P 354987-55-6P 354987-58-9P

354987-62-5P 354987-67-0P 354987-71-6P

(amine compound for organic electroluminescent device showing longer luminescent lifetime and excellent durability)

IT 74-31-7 106-37-6, 1,4-Dibromobenzene 3001-15-8, 4,4'-Diiodobiphenyl 19606-98-5 138417-49-9 144981-86-2, 2,7-Diiodo-9,9-dimethyl-9H-fluorene 195443-34-6 280113-41-9 302579-18-6 308144-59-4 308144-63-0, 2-(N,N-Diphenylamino)-9,9-dimethyl-7-iodo-9H-fluorene 329180-34-9 354987-74-9 354987-75-0 354987-76-1 354987-77-2 354987-78-3 354987-79-4 354987-80-7 354987-81-8 354987-82-9

354987-83-0 354987-84-1 354987-85-2 354987-86-3
 (synthesis of amine compound for organic electroluminescent
 device showing longer luminescent lifetime
 and excellent durability)

L31 ANSWER 37 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:347085 HCAPLUS

DOCUMENT NUMBER: 134:359579

TITLE: Bis(aminostyryl)stilbene-type compound,
 synthetic intermediate for the compound,
 manufacture of the intermediate and the
 compound, and organic electroluminescent
 device

INVENTOR(S): Takada, Kazunori; Ichimura, Mari; Ishibashi,
 Tadashi; Tamura, Shinichiro

PATENT ASSIGNEE(S): Sony Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 44 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001131128	A2	20010515	JP 1999-318277	1999 1109

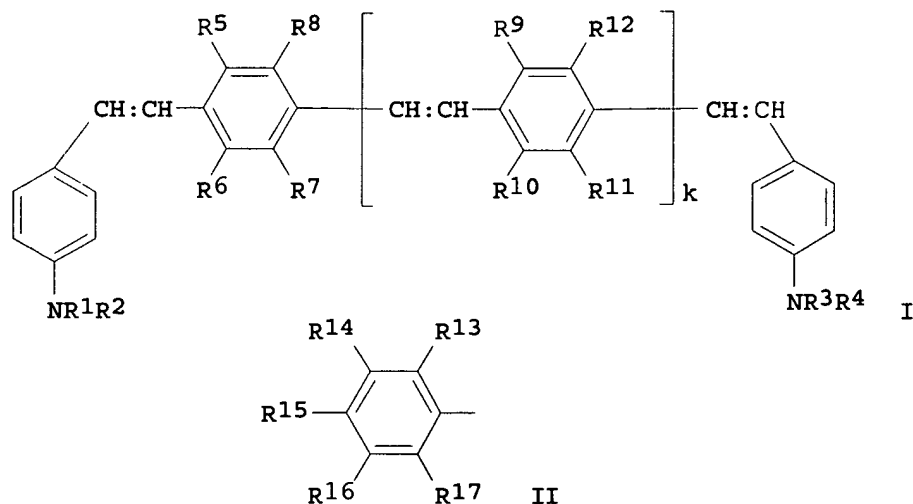
PRIORITY APPLN. INFO.:

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 JP 1999-318277

1999
1109

OTHER SOURCE(S): MARPAT 134:359579
 GI

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AB The stilbene compound is that represented as I [R1-R4 form combinations of unsubstituted aryl and substituted aryl II; ≥ 1 of R5-R12 = H, (un)saturated hydrocarbyl, cyano, NO₂, CF₃, halogen; $k \geq 1$; ≥ 1 R13-R17 = C ≥ 1 (un)saturated hydrocarbyloxy, hydrocarbyl]. The stilbene compound is manufactured by condensation of p-R18R19NC₆H₄CHO (R18, R19 are aryl corresponding to R1-R4) and the claimed intermediate diphosphonate III or diphosphonium salt IV (R20-R27 are groups corresponding to R5-R12; R28, R29 = hydrocarbyl; X = halogen), preferably by Wittig-Horner reaction or Wittig reaction. The intermediates are manufactured by reaction of the claimed intermediate halogenated aryl compound V and trialkyl phosphite or PPh₃. The aryl compound V is manufactured from V (X = H) and N-halogenated succinimide. The green-to-red light-emitting electroluminescent display **device** involves the bis(aminostyryl)stilbene in an organic substance layer sandwiched between an anode and a cathode.

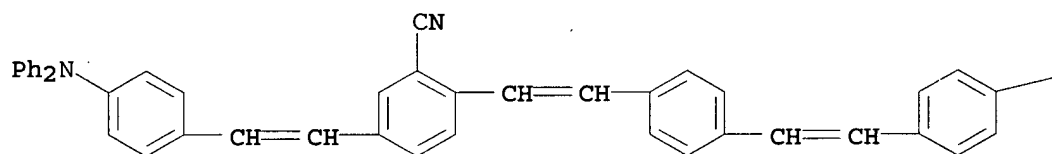
IT 260255-63-8

(manufacture of bisaminostyrylstilbene for
electroluminescent display device)

RN 260255-63-8 HCAPLUS

CN Benzonitrile, 5-[2-[4-(diphenylamino)phenyl]ethenyl]-2-[2-[4-[2-[4-(diphenylamino)phenyl]ethenyl]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

—NPh₂

IC ICM C07C211-54

ICS C07C022-04; C07C209-68; C07C213-08; C07C217-92; C07F009-40;
C09B057-00; C09K011-06; H05B033-14; H05B033-22

CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
Section cross-reference(s): 25, 73

IT Wittig reaction

(Wittig-Horner reaction; manufacture of bisaminostyrylstilbene for
electroluminescent display device)

IT Phosphors

(electroluminescent; manufacture of bisaminostyrylstilbene for
electroluminescent display device)

IT Phosphonium compounds

(intermediate for Wittig reaction; for manufacture of
bisaminostyrylstilbene for electroluminescent display
device)

IT Electroluminescent **devices**

Wittig reaction

(manufacture of bisaminostyrylstilbene for electroluminescent display device)

IT 4181-05-9 42906-19-4 69304-88-7 87755-82-6 89115-20-8
89115-21-9 288626-97-1 288626-98-2
(for manufacture of bisaminostyrylstilbene for electroluminescent display device)

IT 260255-63-8 260255-64-9 260255-65-0
260255-66-1 260255-68-3 260255-69-4
(manufacture of bisaminostyrylstilbene for electroluminescent display device)

IT 62556-05-2P 338992-54-4P 338992-56-6P 338992-58-8P
338992-60-2P 338992-63-5P 338992-66-8P
(manufacture of bisaminostyrylstilbene for electroluminescent display device)

L31 ANSWER 38 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:269316 HCAPLUS

DOCUMENT NUMBER: 134:303134

TITLE: Aryl amine containing heterocyclic rings for organic electroluminescent device

INVENTOR(S): Kido, Junji; Uchishiro, Tsuyoshi; Ichiyonagi, Toshiyuki

PATENT ASSIGNEE(S): Chemipro Kasei K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 35 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

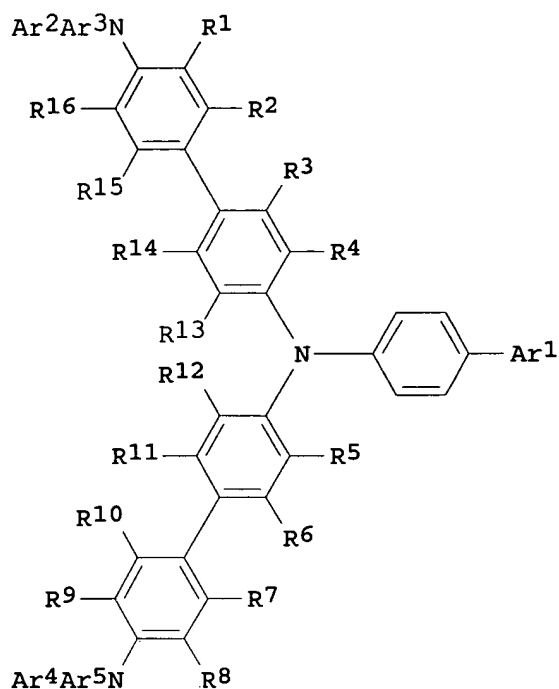
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001106678	A2	20010417	JP 1999-283470	1999 1004

PRIORITY APPLN. INFO.: <--
JP 1999-283470
1999
1004

OTHER SOURCE(S): <--
MARPAT 134:303134
GI

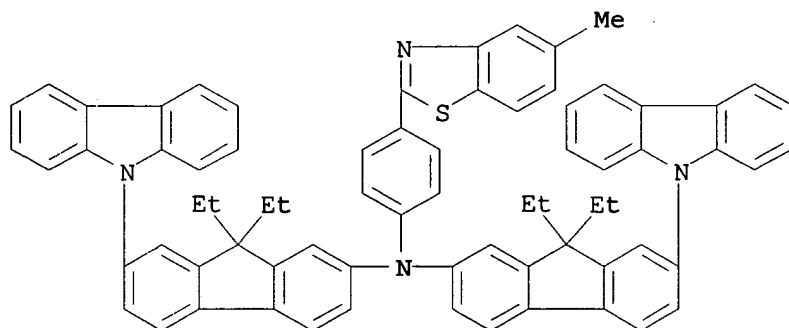


AB The title aryl amine has structure I (Ar1 = heterocyclics; R1-16 = H, amino, alkyl, alkoxy, aryl; Ar2-5 = aryl) and ≥ 750 mol. weight The aryl amine has a relatively large mol. weight and provides the EL device of the excellence in the luminescent efficiency, coatability, durability, and storageability.

IT **334698-20-3P**
(aryl amine containing heterocyclic rings for organic electroluminescent device)

RN 334698-20-3 HCAPLUS

CN 9H-Fluoren-2-amine, 7-(9H-carbazol-9-yl)-N-[7-(9H-carbazol-9-yl)-9,9-diethyl-9H-fluoren-2-yl]-9,9-diethyl-N-[4-(5-methyl-2-benzothiazolyl)phenyl]- (9CI) (CA INDEX NAME)



IC ICM C07D277-66

ICS C07D317-00; C07D417-14; H05B033-14; H05B033-22

CC 74-13 (Radiation Chemistry, Photochemistry, and

Photographic and Other Reprographic Processes)

Section cross-reference(s): 28

ST aryl amine heterocyclic ring org electroluminescent **device**
 IT Amines, properties
 (aromatic; aryl amine containing heterocyclic rings for organic
 electroluminescent **device**)
 IT Electroluminescent **devices**
 (aryl amine containing heterocyclic rings for organic
 electroluminescent **device**)
 IT Heterocyclic compounds
 (aryl amine containing heterocyclic rings for organic
 electroluminescent **device**)
 IT Electroluminescent **devices**
 (panels; aryl amine containing heterocyclic rings for organic
 electroluminescent **device**)
 IT 334698-17-8P 334698-18-9P 334698-20-3P
 334698-21-4P
 (aryl amine containing heterocyclic rings for organic
 electroluminescent **device**)
 IT 86-74-8, Carbazole 92-86-4, 4,4'-Dibromobiphenyl 122-39-4,
 Diphenylamine, reactions 3001-15-8, 4,4'-Diiodobiphenyl
 37615-72-8
 (aryl amine containing heterocyclic rings for organic
 electroluminescent **device**)
 IT 167218-38-4P 197969-58-7P 202831-64-9P 212385-73-4P
 334698-19-0P
 (aryl amine containing heterocyclic rings for organic
 electroluminescent **device**)

L31 ANSWER 39 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:254870 HCAPLUS

DOCUMENT NUMBER: 134:287964

TITLE: Organic compound for organic
electroluminescence member

INVENTOR(S): Hosokawa, Chishio; Ikeda, Shuji

PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 28 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001097949	A2	20010410	JP 1999-277956	1999 0930

PRIORITY APPLN. INFO.:

<--
 JP 1999-277956

1999
0930

OTHER SOURCE(S): MARPAT 134:287964

AB The title organic compound is represented by
 [Ar4Ar5C=CR1]s{(Ar2)m(Ar1)k(Ar3)n}w[R2C=CAr6Ar7]t (Ar1 = divalent
 organic group; Ar2,3 = C6-30 arylene, etc.; Ar4-7 = C6-20 aryl, etc.;
 R1,2 = H, C1-6 alkyl, etc.; m, n, s, and t = 0, 1, 2). When the
 organic compound is used as a recombination site-forming substance and

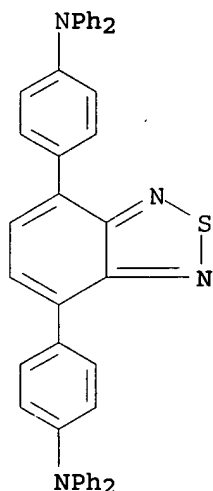
a light-emitting material, the electroluminescence member gives high efficiency and long lifetime.

IT 333432-20-5P

(organic compound for organic electroluminescence member)

RN 333432-20-5 HCAPLUS

CN Benzenamine, 4,4'-(2,1,3-benzothiadiazole-4,7-diyl)bis[N,N-diphenyl- (9CI) (CA INDEX NAME)



IC ICM C07D209-44

ICS C07D235-08; C07D249-18; C07D263-56; C07D275-04; C07D285-14;
C07D333-72; C07D417-14; C07D495-04; C07D513-04; C09K011-00

CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)

Section cross-reference(s): 27

IT Electroluminescent **devices**

(organic compound for)

IT 333432-12-5P 333432-14-7P 333432-16-9P 333432-18-1P

333432-20-5P 333432-22-7P 333432-24-9P

(organic compound for organic electroluminescence member)

L31 ANSWER 40 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:694280 HCAPLUS

DOCUMENT NUMBER: 133:259476

TITLE: Amino or styryl compound, organic thin film,
and electroluminescent **device**

INVENTOR(S): Hosokawa, Chishio; Funahashi, Masakazu; Azuma,
Hisahiro; Ikeda, Shuji; Arai, Hiromasa

PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 30 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000273056	A2	20001003	JP 1999-352216	

1999
1210

PRIORITY APPLN. INFO.:

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JP 1999-10660

A

1999
0119

OTHER SOURCE(S): MARPAT 133:259476

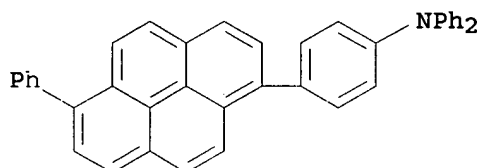
AB The compound comprises D1Ar1X1(X2)n (I; Ar1 = C6-30 di- or trivalent aromatic group; X1, X2 = styryl, styrylaryl, diarylamino, diarylaminoaryl; n = 0, 1; if X1 or X2 = the styryl group, then D1 = C16-60 aromatic group having ≥ 4 carbon rings; if X1 and X2 = the amino group, then D1 = C20-60 aromatic group having ≥ 5 carbon rings). I shows good heat resistance (glass transition temperature $\geq 90^\circ$) and long luminescence lifetime.

IT 294881-17-7P

(amino or styryl compound for heat-resistant organic thin film or electroluminescent device)

RN 294881-17-7 HCAPLUS

CN Benzenamine, N,N-diphenyl-4-(6-phenyl-1-pyrenyl)- (9CI) (CA INDEX NAME)



IC ICM C07C015-60

ICS C07C211-54; C07C211-57; C07D209-86; C07D223-24; C09K011-06;
H05B033-14; H05B033-22

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 25, 73

ST electroluminescent device polycyclic amino styryl compd;
heat resistant thin film electroluminescent compd

IT Electroluminescent devices

(amino or styryl compound for heat-resistant organic thin film or electroluminescent device)

IT Phosphors

(electroluminescent; amino or styryl compound for heat-resistant organic thin film or electroluminescent device)

IT 294881-17-7P 294881-18-8P 294881-21-3P

294881-24-6P

(amino or styryl compound for heat-resistant organic thin film or electroluminescent device)

IT 294881-22-4P 294881-23-5P 294881-26-8P 294881-27-9P

(amino or styryl compound for heat-resistant organic thin film or electroluminescent device)

IT 279672-13-8 294881-28-0 294881-29-1

294881-30-4 294881-31-5 294881-32-6

294881-33-7 294881-34-8 294881-35-9 294881-36-0

294881-37-1 294881-38-2 294881-39-3

294881-40-6 294881-41-7 294881-42-8 294881-43-9

294881-44-0D, fluorene derivs. 294881-45-1

(amino or styryl compound for heat-resistant organic thin film or electroluminescent device)

IT 5101-27-9P, 1-Phenylpyrene 23674-20-6P, 9-Bromo-10-phenylanthracene 36809-26-4P, 4-Bromotriphenylamine 202831-65-0P 294881-19-9P 294881-20-2P 294881-47-3P
(in preparation of amino or styryl compound for heat-resistant organic thin film or electroluminescent device)

IT 92-86-4, 4,4'-Dibromobiphenyl 106-37-6, 1,4-Dibromobenzene 108-86-1, Bromobenzene, reactions 122-39-4, Diphenylamine, reactions 523-27-3, 9,10-Dibromoanthracene 602-55-1, 9-Phenylanthracene 626-39-1, 1,3,5-Tribromobenzene 776-74-9, α -Bromodiphenylmethane 1714-29-0, 1-Bromopyrene 103068-20-8 173678-07-4, 3,5-Di(1-naphthyl)bromobenzene 201734-64-7 294881-25-7
(in preparation of amino or styryl compound for heat-resistant organic thin film or electroluminescent device)

L31 ANSWER 41 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:585508 HCAPLUS

DOCUMENT NUMBER: 133:185625

TITLE: Electroluminescent bis(aminostyryl)benzene compounds, their synthetic intermediates, and manufacture of the compounds

INVENTOR(S): Ichimura, Mari; Tamura, Shinichiro; Ishibashi, Tadashi; Takada, Kazunori

PATENT ASSIGNEE(S): Sony Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 148 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

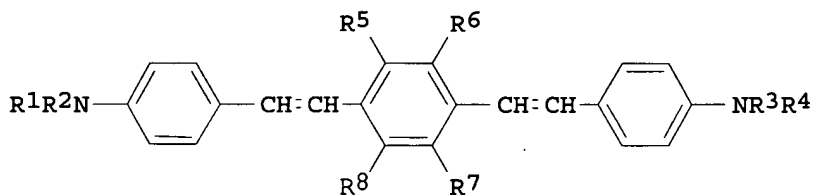
FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000230132	A2	20000822	JP 1999-312069	1999 1102
US 6337167	B1	20020108	US 1999-455724	1999 1206
US 6525212	B1	20030225	US 2000-704960	2000 1102
US 2003060652	A1	20030327	US 2002-228019	2002 0826
US 2003069437	A1	20030410	US 2002-227671	2002 0826
US 2003073863	A1	20030417	US 2002-227711	2002 0826
PRIORITY APPLN. INFO.:			JP 1998-347561	A 1998

1207
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 JP 1999-312069 A 1999
 1102
 <--
 US 1999-455724 A2 1999
 1206
 <--
 US 2000-704960 A3 2000
 1102
 <--

OTHER SOURCE(S): MARPAT 133:185625
 GI



AB The bis(aminostyryl)benzenes are those represented as I (R1-R4 = aryls; R5-R8 involves cyano, NO₂, halogen; other Markush structures corresponding to the compds. are also claimed). The compds. are manufactured by Wittig-Horner reaction or Wittig reaction of the claimed intermediates and the intermediates may be manufactured by coupling reaction. The compds. showing yellow to red electroluminescence are suitable for display device.

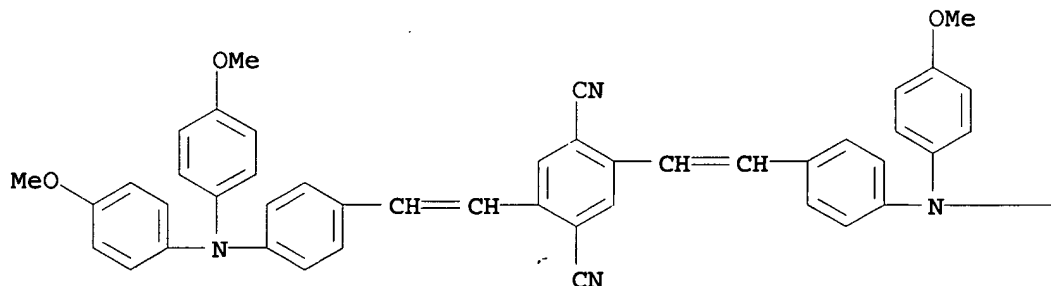
IT 251101-60-7P

(manufacture of bis(aminostyryl)benzenes showing yellow to red electroluminescence for display device)

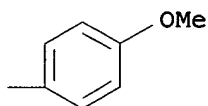
RN 251101-60-7 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



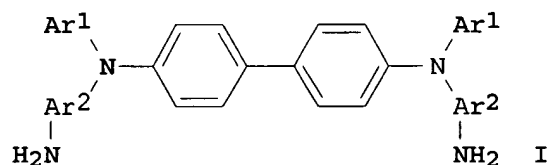
PAGE 1-B



- IC ICM C09B023-00
ICS C09B023-00; C07C211-56; C07C217-92; C07C223-06; C07C253-30;
C07C255-51; C07F009-40; C07F009-54; C09K011-06; H05B033-14
- CC 74-13. (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
Section cross-reference(s): 41
- ST yellow red electroluminescence bisaminostyrylbenzene manuf;
electroluminescent **device** bisaminostyrylbenzene; Wittg
Horner reaction bisaminostyrylbenzene
- IT Wittig reaction
(Wittig-Horner reaction; for manufacture of bis(aminostyryl)benzenes
showing yellow to red electroluminescence for display
device)
- IT Coupling reaction
Wittig reaction
(for manufacture of bis(aminostyryl)benzenes showing yellow to red
electroluminescence for display **device**)
- IT Electroluminescent **devices**
(manufacture of bis(aminostyryl)benzenes showing yellow to red
electroluminescence for display **device**)
- IT 62-53-3, Benzenamine, reactions 603-35-0, Triphenylphosphine,
reactions 288627-04-3
(for manufacture of bis(aminostyryl)benzenes showing yellow to red
electroluminescence for display **device**)
- IT 4316-52-3P 4316-53-4P 20440-94-2P 20440-95-3P 42906-19-4P
89115-20-8P 89115-21-9P
(intermediate; manufacture of bis(aminostyryl)benzenes showing
yellow to red electroluminescence for display **device**)
- IT 603-34-9 4181-05-9 4316-50-1 4316-51-2 36809-23-1
61231-45-6 87755-82-6 131660-61-2 138310-87-9 178477-23-1
288626-94-8 288626-95-9 288626-96-0 288626-97-1
288626-98-2 288626-99-3 288627-00-9 288627-01-0
288627-02-1
(intermediate; manufacture of bis(aminostyryl)benzenes showing
yellow to red electroluminescence for display **device**)
- IT 251101-60-7P 251349-04-9P 253868-17-6P
253868-91-6P 288626-78-8P 288626-79-9P
288626-80-2P 288626-81-3P 288626-82-4P
288626-83-5P 288626-84-6P 288626-85-7P
288626-86-8P 288626-87-9P 288626-88-0P
288626-89-1P
(manufacture of bis(aminostyryl)benzenes showing yellow to red
electroluminescence for display **device**)
- IT 288626-90-4 288626-91-5 288626-92-6
288626-93-7
(manufacture of bis(aminostyryl)benzenes showing yellow to red
electroluminescence for display **device**)

L31 ANSWER 42 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2000:430007 HCAPLUS
 DOCUMENT NUMBER: 133:66050
 TITLE: Diamine positive hole-transfer compound, its
 manufacture, and organic electric-field
 light-emitting device
 INVENTOR(S): Hahn, Ki-Jon; Kim, Yung-Kyo; Lee, Je-Gyun;
 Choi, Don-Kuon
 PATENT ASSIGNEE(S): Ness Co., Ltd., S. Korea
 SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000178236	A2	20000627	JP 1999-359563	1999 1217
JP 3251932	B2	20020128	<--	
KR 2000047424	A	20000725	KR 1999-26278	1999 0701
US 6337404	B1	20020108	US 1999-461238	1999 1216
US 6342637	B1	20020129	US 2001-924552	2001 0809
PRIORITY APPLN. INFO.:			KR 1998-55797	A 1998 1217
			KR 1999-26278	A 1999 0701
			US 1999-461238	A3 1999 1216
OTHER SOURCE(S):				
GI				



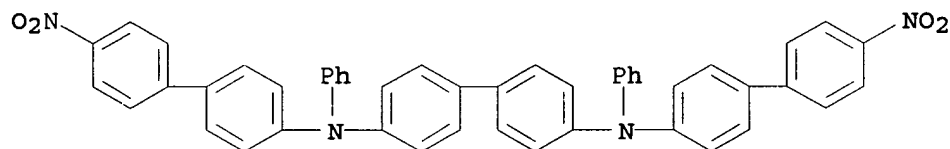
AB The compound has a formula I (Ar1 = Ph, biphenyl; Ar2 = phenylene, biphenylene; Ar1 and Ar2 may bond to form a carbazol ring with N). The manufacture method involves nitrorizing a compound Ar1Ar2N-Ph-p-Ph-NAr1Ar2 to form a compound Ar1Ar2(NO2)N-Ph-p-Ph-NAr1Ar2(NO2) and reducing the latter compound. The method may involve (1) coupling I-Ph-NO2 or Br-Ph-p-Ph-NO2 to obtain a dinitrobiphenyl compound and (2) reducing to obtain the diamine compound. The **device** contains a pos.-hole-transfer layer containing the diamine compound. The compound with excellent pos. hole-transfer characteristic and high glass transition temperature is manufactured by the method. The **device** shows excellent luminance and long life.

IT 263875-21-4P

(diaminobiphenyl compound for organic elec.-field light-emitting device pos.-hole transfer material)

RN 263875-21-4 HCAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(4'-nitro[1,1'-biphenyl]-4-yl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IC ICM C07C211-54

ICS C07C209-36; C07D209-88; C09K011-06; H05B033-14; H05B033-22

CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)

Section cross-reference(s): 73

ST pos hole transfer compd LED; light emitting **device**

diamine pos hole transfer; coupling redn diaminobiphenyl compd LED

IT Electroluminescent **devices**

(diaminobiphenyl compound for organic elec.-field light-emitting device pos.-hole transfer material)

IT 155557-65-6P 263875-20-3P 277761-09-8P

(diaminobiphenyl compound for organic elec.-field light-emitting device pos.-hole transfer material)

IT 86-74-8, Carbazole 531-91-9, N,N'-Diphenylbenzidine 3001-15-8, 4,4'-Diiodobiphenyl 26264-10-8, Bromobiphenyl

(diaminobiphenyl compound for organic elec.-field light-emitting device pos.-hole transfer material)

IT 6242-98-4P, 4-Bromo-4'-nitro-1,1'-biphenyl 20441-08-1P

58328-31-7P 263875-21-4P 277761-10-1P

(diaminobiphenyl compound for organic elec.-field light-emitting device pos.-hole transfer material)

L31 ANSWER 43 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:363829 HCAPLUS

DOCUMENT NUMBER: 133:24764

TITLE: Organic electroluminescent display **devices** with high luminance and efficient light emission

INVENTOR(S): Onikubo, Shunichi; Tamano, Michiko

PATENT ASSIGNEE(S): Toyo Ink Mfg. Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.

DOCUMENT TYPE: CODEN: JKXXAF
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: 1 Japanese
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000150152	A2	20000530	JP 1998-324629	1998 1116

PRIORITY APPLN. INFO.: <--
 JP 1998-324629
 1998
 1116

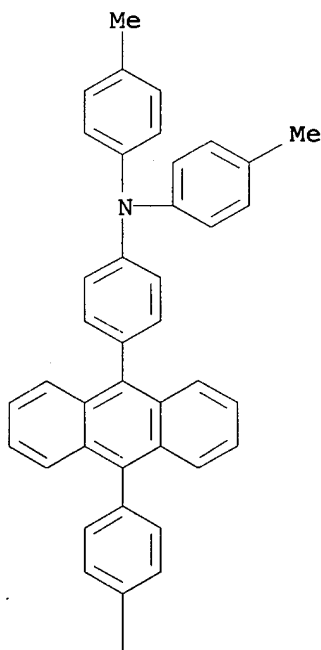
AB The **device** comprises a multicolored light-emitting layer and either or both of hole- and electron-injection layer(s) sandwiched in between a pair of electrodes. The light-emitting layer comprises multiple light-emitting regions having different colors and the hole- or the electro-injection layer is formed entirely on the light-emitting layer. Preferable compds. for each of the layers are given. **Devices** showing constant emission of each color are obtained.

IT 194296-06-5
 (blue light-emitting;
 electroluminescent display devices with high
 luminance and uniform emission of each colors)

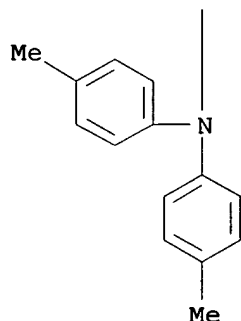
RN 194296-06-5 HCAPLUS

CN Benzenamine, 4,4'-(9,10-anthracenediyl)bis[N,N-bis(4-methylphenyl)-
 (9CI) (CA INDEX NAME)

PAGE 1-A



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- IC ICM H05B033-12
ICS G09F009-30; H05B033-14; H05B033-22
- CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
- ST electroluminescent display multicolored light emitting layer; hole injection layer electroluminescent display **device**; electron injection layer electroluminescent display **device**
- IT Electroluminescent **devices**
(electroluminescent display **devices** with high luminance and uniform emission of each colors)
- IT 198-55-0, Perylene 4061-32-9 146162-54-1 158604-97-8
194296-06-5 213968-34-4 244280-90-8 271777-31-2
271777-32-3 271777-33-4
(blue light-emitting;
electroluminescent display **devices** with high luminance and uniform emission of each colors)
- IT 58280-31-2
(electron-injection layer and blue light-emitting layer; electroluminescent display **devices** with high luminance and uniform emission of each colors)
- IT 2085-33-8, Tris(8-hydroxyquinolino)aluminum
(electron-injection layer and green light-emitting layer; electroluminescent display **devices** with high luminance and uniform emission of each colors)
- IT 146162-49-4 150405-69-9 188049-36-7 188049-37-8
188049-39-0 188049-41-4 213620-77-0 221554-51-4
272116-82-2 272116-88-8 272122-21-1
(electron-injection layer; electroluminescent display **devices** with high luminance and uniform emission of each colors)
- IT 19205-19-7, N,N'-Dimethylquinacridone 38215-36-0, Coumarin 6
113933-87-2 177799-15-4 177799-16-5 189263-86-3
219596-73-3 220720-18-3
(green light-emitting;
electroluminescent display **devices** with high luminance and uniform emission of each colors)
- IT 147-14-8, Copper phthalocyanine 574-93-6, Phthalocyanine
808-57-1, 2,3,6,7,10,11-Hexamethoxytriphenylene 32829-11-1
58473-78-2, 1,1-Bis[4-(di-p-tolylamino)phenyl]cyclohexane
65181-78-4 76185-65-4 123847-85-8 124729-98-2 151026-65-2
166444-98-0 208939-03-1 244281-07-0 272117-02-9

272117-03-0

(hole-injection layer; **electroluminescent** display
devices with high **luminance** and uniform
 emission of each colors)

IT 517-51-1, Rubrene 51325-91-8 220071-88-5 227009-37-2

(orange **light-emitting**;
electroluminescent display **devices** with high
luminance and uniform emission of each colors)

IT 7385-67-3, Nile red 219638-70-7 252755-86-5 252755-96-7

271777-57-2 271777-58-3

(red **light-emitting**;
electroluminescent display **devices** with high
luminance and uniform emission of each colors)

L31 ANSWER 44 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:362825 HCAPLUS

DOCUMENT NUMBER: 133:24760

TITLE: Organic color electroluminescent display
device

INVENTOR(S): Onikubo, Shunichi; Tamano, Michiko

PATENT ASSIGNEE(S): Toyo Ink Mfg. Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2000150161	A2	20000530	JP 1998-324628	1998 1116

PRIORITY APPLN. INFO.:

<--
 JP 1998-324628

1998
 1116

AB The display **device** is an assembly of organic
 electroluminescent **devices** containing an aromatic tertiary
 amine as a light-emitting material. The **device** shows
 high emission and long service life.

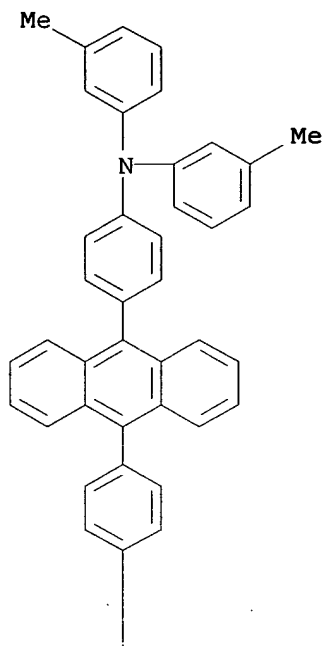
IT 194296-03-2

(blue-emitting layer; organic color **electroluminescent**
 display **device** containing tertiary amines)

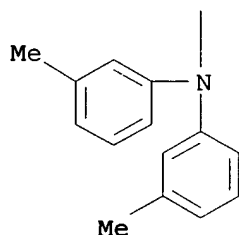
RN 194296-03-2 HCAPLUS

CN Benzenamine, 4,4'-(9,10-anthracenediyl)bis[N,N-bis(3-methylphenyl)-
 (9CI) (CA INDEX NAME)

PAGE 1-A



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IC ICM H05B033-14
ICS C09K011-06

CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
Section cross-reference(s): 73

IT Electroluminescent **devices**
(organic color electroluminescent display **device** containing
tertiary amines)

IT 144810-07-1 151026-65-2 175395-59-2 **194296-03-2**
213968-34-4 244280-90-8 **254431-30-6**
254432-63-8 271777-31-2 271777-32-3 271777-33-4
271777-34-5
(blue-emitting layer; organic color **electroluminescent**
display **device** containing tertiary amines)

IT 65181-78-4 144810-08-2 147850-55-3 177799-16-5 213968-38-8
219596-73-3 **220720-18-3** 271777-35-6
271777-56-1 **271777-57-2**

(green-emitting layer; organic color **electroluminescent** display **device** containing tertiary amines)
 IT 76185-65-4 123847-85-8 124729-98-2 185690-39-5 244281-07-0
 244281-08-1
 (hole-injection layer; organic color **electroluminescent** display **device** containing tertiary amines)
 IT 252756-13-1 271778-32-6
 (orange-emitting layer; organic color **electroluminescent** display **device** containing tertiary amines)
 IT 220071-88-5
 (organic color **electroluminescent** display **device** containing tertiary amines)
 IT 58473-78-2, 1,1-Bis[4-(di-p-tolylamino)phenyl]cyclohexane
 219638-70-7 252755-86-5 252755-96-7 271777-58-3
 (red-emitting layer; organic color **electroluminescent** display **device** containing tertiary amines)

L31 ANSWER 45 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:215999 HCAPLUS

DOCUMENT NUMBER: 132:258111

TITLE: Benzimidazoles, their preparation, hole-transporting materials, electroluminescent **devices**, and electrophotographic photoreceptors thereof
 INVENTOR(S): Ueda, Hideaki; Fujino, Yasumitsu; Furukawa, Keiichi

PATENT ASSIGNEE(S): Minolta Camera Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 25 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

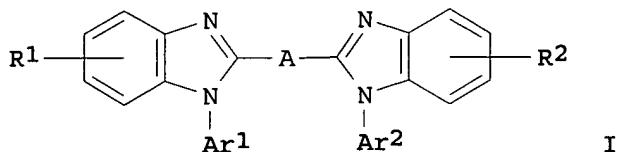
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2000095766	A2	20000404	JP 1998-269595	1998 0924

PRIORITY APPLN. INFO.: <-- JP 1998-269595

1998
0924

OTHER SOURCE(S): MARPAT 132:258111
 GI



AB The benzimidazole compds. are shown as I (A = arylene, heterocyclic ring which may be linked; Ar1, Ar2 = aryl,

heterocyclic ring; R1, R2 = H, alkyl, alkoxy, halo) and are prepared by reacting benzimidazoles II (A, R1, R2 = same as above) with halogens Ar1X and Ar2X (Ar1, Ar2 = same as above; X = halo). The hole-transporting materials for the electrophotog. photoreceptors comprise I and show excellent durability. The electroluminescent devices have ≥ 1 layer containing I.

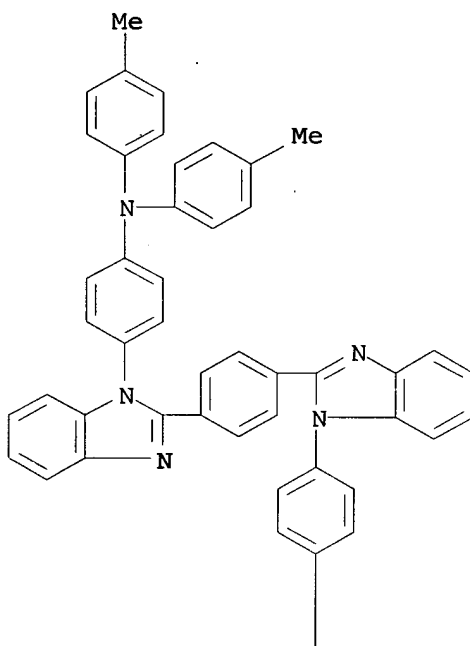
IT 262434-61-7P

(preparation of benzimidazole derivs. for hole-transporting materials and **electroluminescent devices** and electrophotog. photoreceptors thereof)

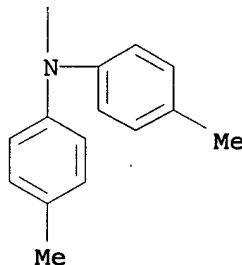
RN 262434-61-7 HCAPLUS

CN Benzenamine, 4,4'-[1,4-phenylenebis(1H-benzimidazole-2,1-diyl)]bis[N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM C07D235-18

ICS C07D409-14; C09K011-06; G03G005-06; H05B033-14; H05B033-22

CC 74-3 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
Section cross-reference(s): 28

ST benzimidazole deriv prepn hole transporting material;
electrophotog hole transporting material benzimidazole deriv;
electroluminescent **device** hole transporting material
benzimidazole

IT Electroluminescent **devices**
Electrophotographic photoconductors (photoreceptors)
(preparation of benzimidazole derivs. for hole-transporting
materials and electroluminescent **devices** and
electrophotog. photoreceptors thereof)

IT 262434-61-7P
(preparation of benzimidazole derivs. for hole-transporting
materials and **electroluminescent devices**
and electrophotog. photoreceptors thereof)

IT 262434-50-4 262434-51-5
(preparation of benzimidazole derivs. for hole-transporting
materials and electroluminescent **devices** and
electrophotog. photoreceptors thereof)

IT 262434-52-6 262434-53-7 262434-54-8
262434-55-9 262434-57-1 262434-58-2
262434-59-3 262434-60-6 262434-62-8
262434-63-9 262434-64-0 262434-65-1
262434-66-2 262434-67-3 262434-68-4
262434-69-5 262434-70-8 262434-71-9
262434-72-0 262434-73-1 262434-74-2
262434-75-3 262434-76-4 262434-77-5
(preparation of benzimidazole derivs. for hole-transporting
materials and **electroluminescent devices**
and electrophotog. photoreceptors thereof)

L31 ANSWER 46 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:106885 HCAPLUS

DOCUMENT NUMBER: 132:144509

TITLE: Trinaphthylbenzene derivative and organic
electroluminescent **device** using the
compound

INVENTOR(S): Uchida, Manabu; Koike, Toshihiro; Izumizawa,
Isanobu; Furukawa, Kenji

PATENT ASSIGNEE(S): Chisso Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

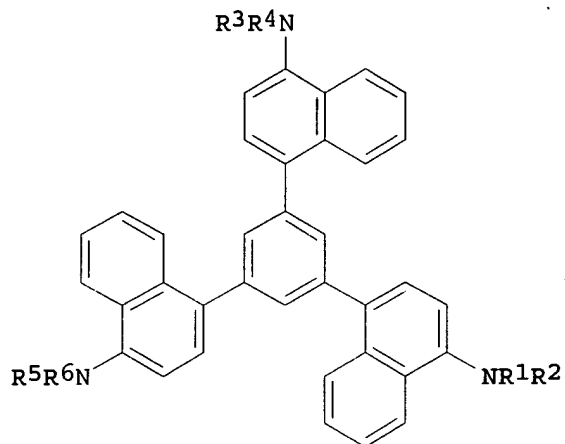
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2000044519	A2	20000215	JP 1998-210733	1998 0727

PRIORITY APPLN. INFO.: <-- JP 1998-210733

1998
0727

OTHER SOURCE(S): MARPAT 132:144509 <--

GI



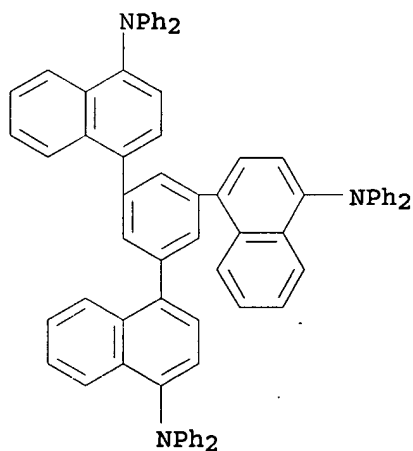
AB The trinaphthylbenzene derivative I [R1-R6 = H, C1-6 alkyl, (substituted) aryl, heterocycle; neighboring aryl and heterocycle may form condensed ring] is used in the electroluminescent **device**., preferably used in a pos. hole-transporting layer or in a light-emitting layer. An electroluminescent light-emitting material and a pos. hole-transporting material containing I are also claimed. The electroluminescent **device** shows prolonged life.

IT 257288-79-2P

(electroluminescent device involving light-emitting or pos. hole-transporting material containing trinaphthylbenzene derivative)

RN 257288-79-2 HCAPLUS

CN 1-Naphthalenamine, 4,4',4''-(1,3,5-benzenetriyl)tris[N,N-diphenyl-
(9CI) (CA INDEX NAME)



IC ICM C07C211-57

ICS C07D209-86; C07D213-74; C09K011-06; H05B033-14; H05B033-22
 CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
 Section cross-reference(s): 25
 ST electroluminescent **device** trinaphthylbenzene deriv long
 life; light emitting layer trinaphthylbenzene electroluminescent
device; pos hole transporting material trinaphthylbenzene
 IT Electroluminescent **devices**
 (electroluminescent **device** involving light-emitting
 or pos. hole-transporting material containing trinaphthylbenzene
 derivative)
 IT 257288-79-2P 257288-80-5P 257288-81-6P
 (electroluminescent **device** involving
 light-emitting or pos. hole-transporting
 material containing trinaphthylbenzene derivative)
 IT 626-39-1, 1,3,5-Tribromobenzene 227314-47-8 257288-82-7
 257288-83-8
 (electroluminescent **device** involving light-emitting
 or pos. hole-transporting material containing trinaphthylbenzene
 derivative from)

L31 ANSWER 47 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:62604 HCAPLUS

DOCUMENT NUMBER: 132:130074

TITLE: Organic electroluminescence **device**
 having 3,3'-biacenaphtho[1,2-
 κ]fluoranthene derivative

INVENTOR(S): Nakatsuka, Masakatsu; Kitamoto, Noriko

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 100 pp.
 CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2000026325	A2	20000125	JP 1998-194430	1998 0709

PRIORITY APPLN. INFO.: <-- JP 1998-194430

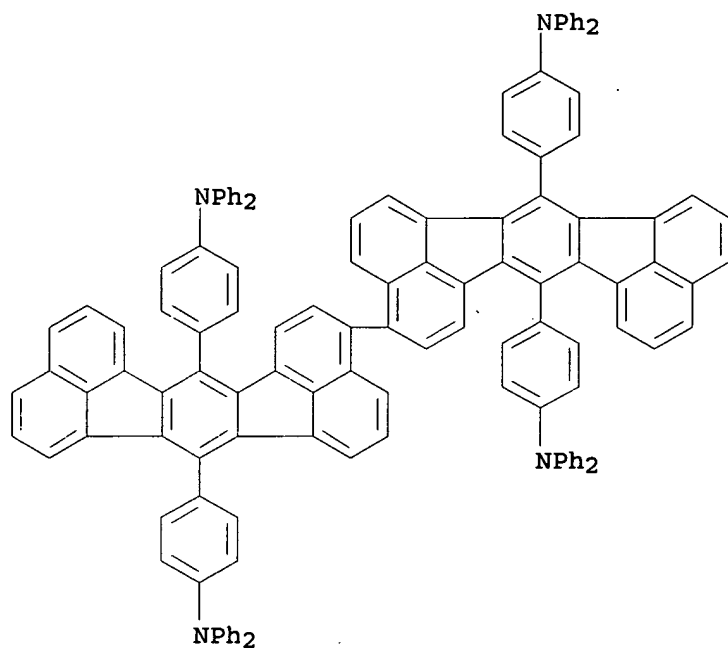
1998
0709

AB The organic electroluminescence **device** has a layer containing
 3,3'-biacenaphtho[1,2-κ]fluoranthene derivative between a pair
 of electrodes. The organic electroluminescence **device**
 provides the bright luminescence.

IT 256328-38-8P
 (organic **electroluminescence device** having
 3,3'-biacenaphtho[1,2-κ]fluoranthene derivative)

RN 256328-38-8 HCAPLUS

CN Benzenamine, 4,4',4'',4'''-[3,3'-biacenaphtho[1,2-κ]fluoranthene]-
 7,7',14,14'-tetrayltetrakis[N,N-diphenyl- (9CI) (CA INDEX NAME)



- IC ICM C07C013-62
ICS C07C022-04; C07C025-22; C07C025-24; C07C033-36; C07C039-12;
C07C043-168; C07C043-20; C07C047-546; C07C049-792;
C07C063-46; C07C069-33; C07C069-76; C07C205-11; C07C211-50;
C07C233-65; C07C255-52; C07C321-28; C09K011-06; H05B033-14
- CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
Section cross-reference(s): 24, 73
- ST org electroluminescence **device** fluoranthene
- IT Electroluminescent **devices**
(organic electroluminescence **device** having
3,3'-biacenaphtho[1,2-k]fluoranthene derivative)
- IT 256327-97-6P 256328-06-0P, 3,3'-Biacenaphtho[1,2-k]fluoranthene
256328-07-1P 256328-08-2P 256328-09-3P 256328-10-6P
256328-11-7P 256328-12-8P 256328-13-9P 256328-14-0P
256328-15-1P 256328-16-2P 256328-17-3P 256328-18-4P
256328-19-5P 256328-20-8P 256328-21-9P 256328-22-0P
256328-23-1P 256328-24-2P 256328-25-3P 256328-26-4P
256328-27-5P 256328-28-6P 256328-29-7P 256328-30-0P
256328-31-1P 256328-32-2P 256328-33-3P 256328-34-4P
256328-35-5P 256328-36-6P 256328-37-7P **256328-38-8P**
256328-39-9P 256328-40-2P 256328-41-3P 256328-42-4P
256328-43-5P 256328-44-6P 256328-45-7P 256328-46-8P
256328-47-9P 256328-48-0P 256328-49-1P 256328-50-4P
256328-51-5P 256328-52-6P 256328-53-7P 256328-54-8P
256328-55-9P 256328-56-0P 256328-57-1P
256328-58-2P 256328-59-3P 256328-60-6P 256328-61-7P
256328-62-8P 256328-63-9P 256328-64-0P
(organic **electroluminescence device** having
3,3'-biacenaphtho[1,2-k]fluoranthene derivative)
- IT 624-31-7, 4-Iodotoluene 1310-58-3, Potassium hydroxide,
reactions 10486-08-5, Sodium 4-Methylphenylthiolate
20607-43-6, Isopropylmercaptan sodium salt 153390-84-2
256327-96-5 256327-98-7 256327-99-8 256328-00-4

256328-01-5 256328-02-6 256328-03-7 256328-04-8
256328-05-9

(organic electroluminescence **device** having
3,3'-biacenaphtho[1,2-k]fluoranthene derivative)

L31 ANSWER 48 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:43387 HCAPLUS

DOCUMENT NUMBER: 132:100536

TITLE: Compound involving styryl-type repeating unit,
manufacture of the compound, and blue
light-emitting electroluminescent
device using the polymer

INVENTOR(S): Igarashi, Tatsuya

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

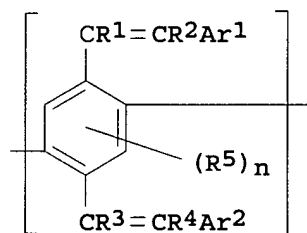
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
JP 2000017057	A2	20000118	JP 1999-118266	1999 0426
US 6210817	B1	20010403	US 1999-301120	1999 0428
			JP 1998-120842	1998 0430

GI



I

AB The compound, preferably polymer, involves ≥ 2 repeating unit
I [R1-R4 = H, substituent; R5 = substituent; n = 0-2; Ar1, Ar2 =
(hetero)aryl]. The electroluminescent **device** has
laminated organic substance layer containing the compound The compound is
prepared by generating CC bond by using a Pd catalyst, e.g.,
reaction of a dibromide and a boric acid derivative in the presence of
Pd-C.

IT 254755-26-5P

(preparation of styryl polymer by using palladium catalyst for blue

light-emitting electroluminescent device)

RN 254755-26-5 HCAPLUS
CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl)[2,5-bis[2-[4-(diphenylamino)phenyl]ethenyl]-1,4-phenylene]] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

IC ICM C08G061-10
ICS C08G061-02; C09K011-06; H05B033-14
CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST styryl compd polymer org electroluminescent **device**;
boric acid deriv dibromide reaction; palladium catalyst dibromide borate reaction
IT Electroluminescent **devices**
Polymerization catalysts
(preparation of styryl polymer by using palladium catalyst for blue light-emitting electroluminescent **device**)
IT 7440-05-3, Palladium, uses
(polymerization catalysts; preparation of styryl polymer by using palladium catalyst for blue light-emitting electroluminescent **device**)
IT 254755-22-1P 254755-23-2P 254755-25-4P **254755-26-5P**
(preparation of styryl polymer by using palladium catalyst for blue light-emitting electroluminescent **device**)

L31 ANSWER 49 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:25608 HCAPLUS

DOCUMENT NUMBER: 132:85990

TITLE: Distyrylarylene derivative for organic electroluminescence **device**

INVENTOR(S): Azuma, Hisahiro; Hosokawa, Chishio; Kusumoto, Tadashi

PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000007604	A2	20000111	JP 1998-171283	1998 0618

<--

PRIORITY APPLN. INFO.:

JP 1998-171283

1998

0618

<--

OTHER SOURCE(S): MARPAT 132:85990

AB The distyrylarylene derivative has structure (R1)(R2)C=CH-Ar1-An-Ar2-CH=C(R3)(R4) (An = divalent fused ≥ 3 rings; Ar1-2 = single bond, C6-30 arylene, polyarylene; R1-4 = H, C6-30 allyl, polyallyl). The distyrylarylene derivative provides the improved luminescence efficiency and the decreased driving voltage.

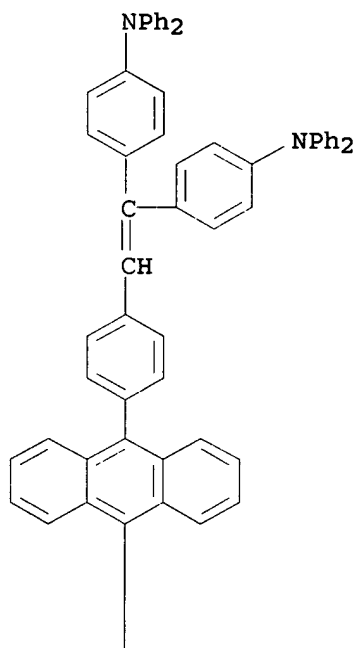
IT 253870-06-3

(Distyrylarylene derivative for organic electroluminescence device)

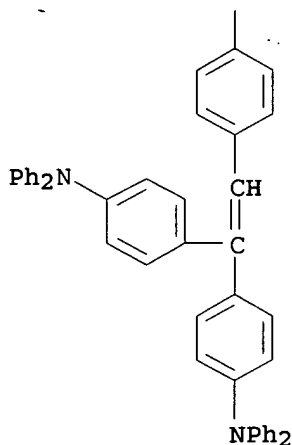
RN 253870-06-3 HCAPLUS

CN Benzenamine, 4,4',4'',4'''-[9,10-anthracenediylbis(4,1-phenylene-2-ethenyl-1-ylidene)]tetrakis[N,N-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM C07C043-20
ICS C07C043-257; C07C211-54; C09K011-06; H05B033-14; H05B033-22
CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 25
ST distyrylarylene org electroluminescence **device**
IT Electroluminescent **devices**
(Distyrylarylene derivative for organic electroluminescence **device**)
IT Alkynes
Alkynes
Aromatic hydrocarbons, uses
Aromatic hydrocarbons, uses
(arynes; Distyrylarylene derivative for organic electroluminescence **device**)
IT 253870-06-3 253870-07-4 253870-08-5
253870-09-6 253870-10-9 253870-11-0
253870-12-1 253870-13-2 253870-14-3
(Distyrylarylene derivative for organic **electroluminescence device**)

L31 ANSWER 50 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:23689 HCAPLUS

DOCUMENT NUMBER: 132:71484

TITLE: New tris(p-N-enamine substituted-aminophenyl)amine compound and organic electroluminescence **device** using the same for display

INVENTOR(S): Enomoto, Kazuhiro; Ogura, Takashi

PATENT ASSIGNEE(S): Sharp Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	

JP 2000007625

A2

20000111

JP 1998-171723

1998
0618

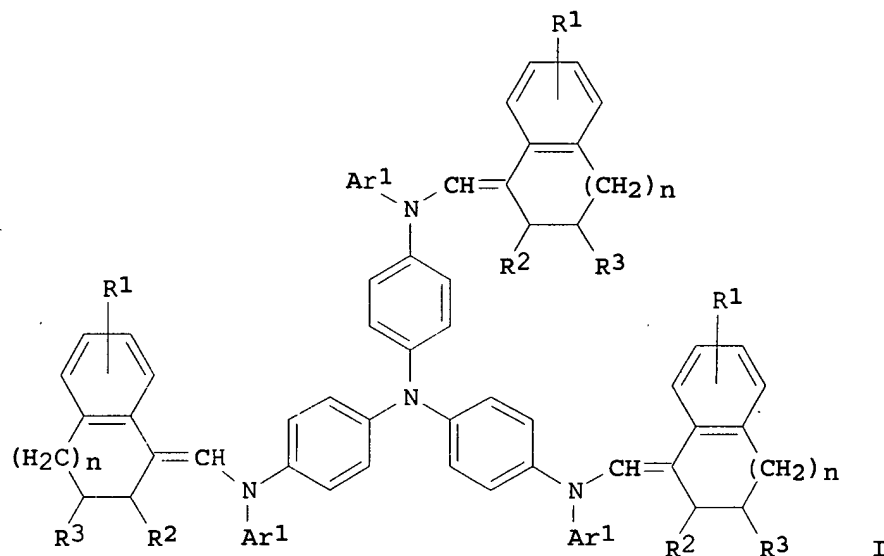
PRIORITY APPLN. INFO.:

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JP 1998-1717231998
0618

OTHER SOURCE(S):

MARPAT 132:71484

GI



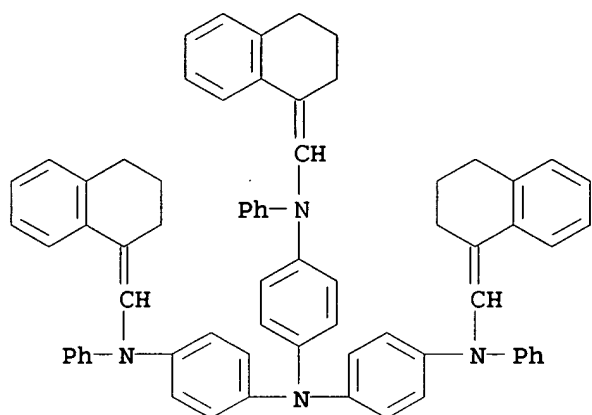
AB The new tris(p-N-enamine substituted-aminophenyl)amine compound is represented by a general formula I (Ar1 = aryl; R1 = H, halo, lower alkyl, lower alkoxy; R2, R3 = H, lower alkyl, aryl; R2 joining together with R3 may form ring; n = 0, 1). The organic electroluminescence device contains the above compound in a hole injection/transport layer. The organic electroluminescence device using the above compound shows low driving voltage, excellent heat-resistance and improved light efficiency.

IT 253439-07-5P

(preparation of new tris(p-N-enamine substituted-aminophenyl)amine compound for organic electroluminescence device)

RN 253439-07-5 HCAPLUS

CN 1,4-Benzenediamine, N-[(3,4-dihydro-1(2H)-naphthalenylidene)methyl]-N',N'-bis[4-[(3,4-dihydro-1(2H)-naphthalenylidene)methyl]phenylamino]phenyl]-N-phenyl- (9CI) (CA INDEX NAME)



- IC ICM C07C211-54
ICS C09K011-06; H05B033-14; H05B033-22
- CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 73
- ST tris enamine aminophenyl amine org electroluminescence **device** display; pos hole transport substance amine
- IT Electroluminescent **devices**
Optical imaging **devices**
(new tris(p-N-enamine substituted-aminophenyl)amine compound and organic electroluminescence **device** using the same for display)
- IT 65181-78-4 126473-20-9 163076-69-5 253439-27-9 253439-28-0
253439-29-1
(in electron barrier layer of organic electroluminescence **device**)
- IT 253439-07-5P 253439-08-6P 253439-13-3P
253439-23-5P 253439-24-6P
(preparation of new tris(p-N-enamine substituted-aminophenyl)amine compound for organic **electroluminescence device**)
- IT 103-84-4, Acetoanilide 575-36-0, N- α -Acetylnaphthylamine
4181-20-8, Tris(p-iodophenyl)amine 18278-24-5,
1,2,3,4-Tetrahydronaphthalene-1-carboxaldehyde 20615-64-9,
Fluorene-9-carboxaldehyde
(preparation of new tris(p-N-enamine substituted-aminophenyl)amine compound for organic electroluminescence **device**)
- IT 220901-71-3P, Tris(4-(phenylamino)phenyl)amine
(preparation of new tris(p-N-enamine substituted-aminophenyl)amine compound for organic electroluminescence **device**)
- IT 253439-06-4P 253439-09-7P 253439-10-0P
253439-11-1P 253439-12-2P 253439-14-4P
253439-15-5P 253439-16-6P 253439-17-7P
253439-18-8P 253439-19-9P 253439-20-2P
253439-21-3P 253439-22-4P 253439-25-7P
253439-26-8P
(preparation of new tris(p-N-enamine substituted-aminophenyl)amine compound for organic **electroluminescence device**)

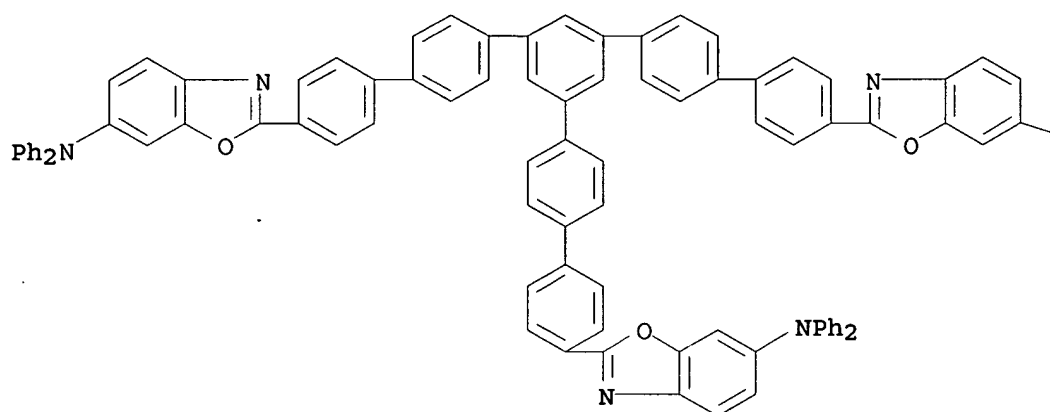
L31 ANSWER 51 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:646905 HCAPLUS

DOCUMENT NUMBER: 131:293366

TITLE: Trisbenzoazole compound for electroluminescent

PAGE 1-A



PAGE 1-B

NPh₂

IC ICM C07D263-62
 ICS C07D235-18; C07D277-66; C07D413-14; C07D417-14
 CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
 Section cross-reference(s): 28, 73
 IT Electroluminescent **devices**
 (trisbenzoazole compound for electroluminescent material)
 IT 245737-26-2P 245737-27-3P 245737-28-4P 245737-29-5P
245737-30-8P
 (trisbenzoazole compound for **electroluminescent**
 material)

L31 ANSWER 52 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1999:456291 HCAPLUS
 DOCUMENT NUMBER: 131:191798
 TITLE: Novel low-molar-mass glasses for
 photorefractive and electroluminescent
 applications
 AUTHOR(S): Hohle, C.; Jandke, M.; Schlöter, S.; Koch, N.;
 Resel, R.; Haarer, D.; Strohmriegl, P.
 CORPORATE SOURCE: Makromolekulare Chemie I and Bayreuther
 Institut für Makromolekulforschung (BIMF),
 Universität Bayreuth, Bayreuth, D-95440,
 Germany
 SOURCE: Synthetic Metals (1999), 102(1-3), 1535-1536
 CODEN: SYMEDZ; ISSN: 0379-6779
 PUBLISHER: Elsevier Science S.A.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A number of organic glass forming starburst mols. have been synthesized

and characterized with regard to their thermal and optical properties. Photorefractivity is observed and discussed within triphenylamine derivs. substituted with an NLO-chromophore. The tuning of glass forming properties in novel phenylquinoxaline glasses and their use as electron transport materials for OLEDs is presented.

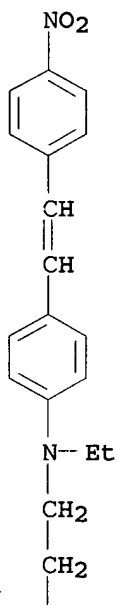
IT 220288-06-2

(novel low-molar-mass glasses for photorefractive and electroluminescent applications)

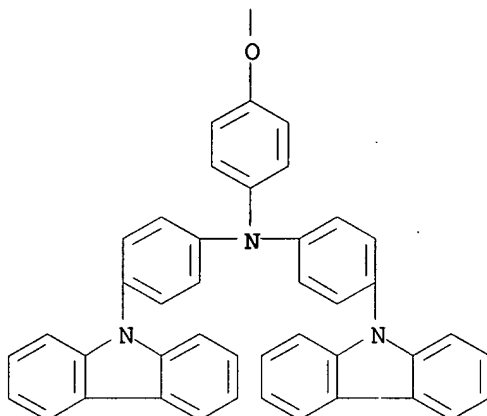
RN 220288-06-2 HCAPLUS

CN Benzenamine, N,N-bis[4-(9H-carbazol-9-yl)phenyl]-4-[2-[ethyl[4-[2-(4-nitrophenyl)ethenyl]phenyl]amino]ethoxy]-(9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)

Section cross-reference(s): 73

IT Electroluminescent **devices**

Optical properties

Photorefractive effect

(novel low-molar-mass glasses for photorefractive and electroluminescent applications)

IT 198827-73-5 203915-07-5 214132-60-2 **220288-06-2**

220288-07-3 **220288-08-4** 238753-75-8 240126-07-2

(novel low-molar-mass glasses for photorefractive and **electroluminescent** applications)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 53 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:282192 HCAPLUS

DOCUMENT NUMBER: 130:289288

TITLE: Amine for organic electroluminescent **device**

INVENTOR(S): Uchida, Manabu; Izumizawa, Takenori; Furukawa, Kenji

PATENT ASSIGNEE(S): Chisso Corporation, Japan

SOURCE: PCT Int. Appl., 32 pp.

CODEN: PIXXD2

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9920596	A1	19990429	WO 1998-JP4730	1998 1020

<--

W: KR, US			
RW: DE, FR, GB			
JP 11124358	A2	19990511	JP 1997-304988

USHA SHRESTHA EIC 1700 REM 4B28

1997
1020

EP 1043305 A1 20001011 EP 1998-947946

1998
1020EP 1043305 B1 20030730
R: DE, FR, GB
US 6485847 B1 20021126 US 2000-5298512000
0626

PRIORITY APPLN. INFO.:

JP 1997-304988

A

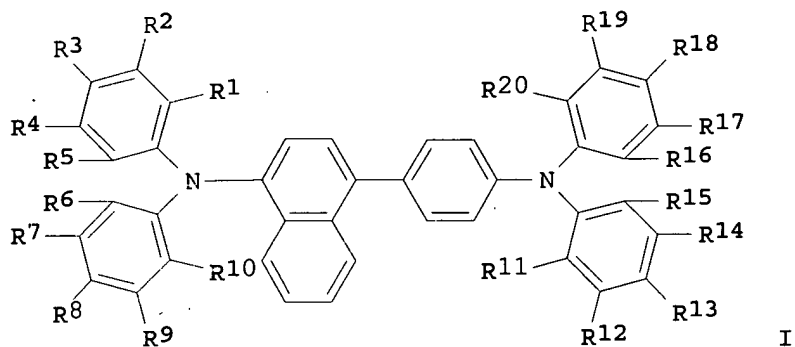
1997
1020

WO 1998-JP4730

W

1998
1020OTHER SOURCE(S):
GI

MARPAT 130:289288



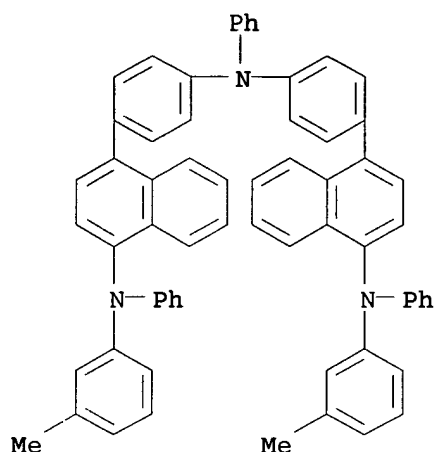
AB An organic electroluminescent **device** having high efficiency and long lifetime contains an amine represented by the formula I as a hole-transporting agent or a luminescent material, wherein R1 to R20 are each independently hydrogen, halogen, C1-6 alkyl, C1-6 alkoxy, (substituted) amino, (substituted) aryl, or (substituted) heterocyclyl, provided that the (substituted) aryl or the (substituted) heterocyclyl may have a fused structure.

IT 222962-67-6P

(preparation and use as **luminescent** material for
electroluminescent devices)

RN 222962-67-6 HCAPLUS

CN 1-Naphthalenamine, 4,4'-[(phenylimino)di-4,1-phenylene]bis[N-(3-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)



IC ICM C07C211-54
 ICS C07C211-57; C07D213-38; H05B033-14; H05B033-22; G03G005-06
 CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
 Section cross-reference(s): 25
 ST arom amine org electroluminescent **device**
 IT Amines, uses
 (aromatic; organic electroluminescent **devices** containing)
 IT Electroluminescent **devices**
 (organic; containing aromatic amines)
 IT 222962-66-5P **222962-67-6P 222962-68-7P**
 (preparation and use as **luminescent** material for
electroluminescent devices)
 REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L31 ANSWER 54 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1999:189304 HCAPLUS
 DOCUMENT NUMBER: 130:203023
 TITLE: Display **devices**
 INVENTOR(S): Friend, Richard Henry
 PATENT ASSIGNEE(S): Cambridge Display Technology Ltd., UK
 SOURCE: PCT Int. Appl., 28 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: **Patent**
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9912398	A1	19990311	WO 1998-GB2615	1998 0901

<--

W: JP, US
 RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU,
 MC, NL, PT, SE
 US 2002185967 A1 20021212 US 2000-486680

2000
0531

<--

US 6580212 B2 20030617
PRIORITY APPLN. INFO.:

GB 1997-18516

A

1997
0901

<--

WO 1998-GB2615

W

1998
0901

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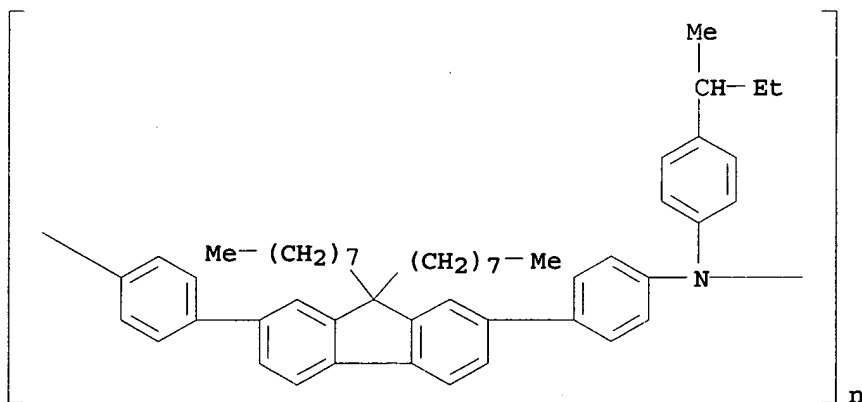
AB Display devices are described which comprise a light-emitting structure with two regions of light-emitting material for emitting light in a viewing direction, the regions being spaced apart in a direction perpendicular to the viewing direction and the light-emitting structure being capable of guiding light emitted from one of the light-emitting regions towards the other emissive region; and a (e.g., light-absorbing or reflective) barrier structure located between the light-emitting regions for inhibiting the propagation of light guided from one of the light-emitting regions toward the other light-emitting region. The light-emitting material may be an organic material, especially a polymeric semiconductor, and the emitting regions may be formed using ink-jet printing.

IT 220797-16-0

(electroluminescent displays with multiple emitting regions)

RN 220797-16-0 HCAPLUS

CN Poly[[[4-(1-methylpropyl)phenyl]imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



IC ICM H05B033-24

ICS H01L051-20; H01L027-15

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76

IT Electroluminescent devices

(electroluminescent displays with multiple emitting regions)

IT Semiconductor device fabrication

(of electroluminescent displays with multiple emitting regions)

IT 7429-90-5, Aluminium, uses 26009-24-5, Poly(p-phenylenevinylene)
50926-11-9, Indium-tin oxide 126213-51-2 210347-52-7

220797-16-0

(electroluminescent displays with multiple emitting regions)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L31 ANSWER 55 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:58431 HCAPLUS

DOCUMENT NUMBER: 130:146278

TITLE: Fluoranthene derivative for organic
electroluminescent device

INVENTOR(S): Nakatsuka, Masakatsu; Kitahon, Noriko

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 106 pp.

CODEN: JKXXAF

DOCUMENT TYPE:

Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11012205	A2	19990119	JP 1998-107828	1998 0417

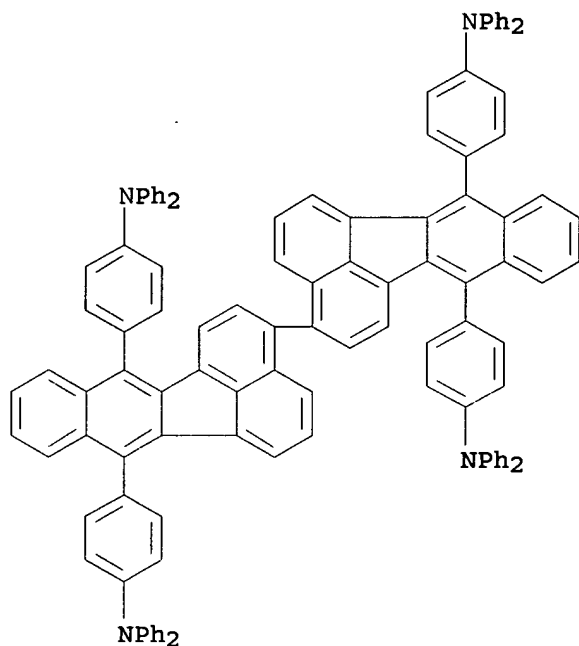
PRIORITY APPLN. INFO.: <--
JP 1997-102081 A
1997
0418

AB The organic electroluminescent device has a layer containing
bis-4,4'-benzo[k] fluoranthene derivative between a pair of
electrodes. The organic electroluminescent device shows
the excellent luminance and is useful as a backlight of liquid
crystal display.

IT 220108-16-7P
(fluoranthene derivative for organic electroluminescent
device)

RN 220108-16-7 HCAPLUS

CN Benzenamine, 4,4',4'',4'''-[3,3'-bibenzo[k]fluoranthene]-
7,7',12,12'-tetrayltetrakis[N,N-diphenyl- (9CI) (CA INDEX NAME)



- IC ICM C07C025-22
 ICS C07C043-168; C07C043-21; C07C043-225; C07C043-275;
 C07C047-546; C07C049-697; C07C069-21; C07C069-76;
 C07C069-773; C07C205-06; C07C211-50; C07C255-52; C07C321-28;
 C09K011-06; H05B033-14; H05B033-22
- CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
 Section cross-reference(s): 25, 73
- ST fluoranethene deriv org electroluminescent **device**
- IT Polycyclic compounds
 (aromatic; fluoranethene derivative for organic electroluminescent
device)
- IT Liquid crystal displays
 (backlight of; fluoranethene derivative for organic electroluminescent
device)
- IT Electroluminescent **devices**
 (fluoranethene derivative for organic electroluminescent
device)
- IT Aromatic compounds
 (polycyclic; fluoranethene derivative for organic electroluminescent
device)
- IT 220107-81-3P 220107-82-4P 220107-97-1P 220108-41-8P
 220108-42-9P 220108-43-0P 220108-45-2P 220108-46-3P
 220108-48-5P 220108-57-6P 220108-64-5P 220108-72-5P
 (fluoranethene derivative for organic electroluminescent
device)
- IT 187086-26-6P 220107-75-5P, 3,3'-Bibenzo[k]fluoranthene
 220107-76-6P 220107-77-7P 220107-79-9P 220107-80-2P
 220107-83-5P 220107-84-6P 220107-85-7P 220107-86-8P
 220107-87-9P 220107-88-0P 220107-89-1P 220107-91-5P
 220107-92-6P 220107-93-7P 220107-94-8P 220107-95-9P
 220107-96-0P 220107-98-2P 220107-99-3P 220108-00-9P
 220108-02-1P 220108-03-2P 220108-04-3P 220108-05-4P
 220108-06-5P 220108-07-6P 220108-08-7P 220108-09-8P

220108-10-1P 220108-11-2P 220108-12-3P 220108-13-4P
 220108-14-5P 220108-15-6P 220108-16-7P 220108-17-8P
 220108-18-9P 220108-19-0P 220108-20-3P 220108-21-4P
 220108-22-5P 220108-23-6P 220108-24-7P 220108-25-8P
 220108-26-9P 220108-28-1P 220108-29-2P 220108-30-5P
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 220108-36-1P 220108-37-2P 220108-38-3P 220108-39-4P
 220108-49-6P 220108-50-9P 220108-51-0P 220108-52-1P
 220108-55-4P 220108-59-8P 220108-62-3P 220108-63-4P
 220108-65-6P 220108-66-7P 220108-67-8P 220108-68-9P
 220108-70-3P 220108-71-4P 220108-73-6P 220108-74-7P
 220108-75-8P 220108-76-9P 220108-77-0P 220108-78-1P

(fluoranthene derivative for organic electroluminescent device)

IT 16391-62-1, 7,12-Diphenylbenzo[κ]fluoranthene 220108-79-2,
 4-Bromo-7,12-bis(4'-methylphenyl)benzo[κ]fluoranthene
 220108-80-5, 4-Bromo-7-phenyl-12-chlorobenzo[κ]fluoranthene
 220108-81-6, 4-Bromo-7,12-bis(4'-methoxyphenyl)-9,10-
 dichlorobenzo[κ]fluoranthene 220108-82-7 220108-84-9,
 4-Bromo-7,12-di-n-propylbenzo[κ]fluoranthene 220108-85-0,
 4-Bromo-7,12-diisopropylbenzo[κ]fluoranthene 220108-86-1,
 4-Bromo-7,12-di-n-butylbenzo[κ]fluoranthene 220108-87-2,
 4-Bromo-7,12-di-n-pentylbenzo[κ]fluoranthene 220108-88-3,
 4-Bromo-7,12-di-n-hexylbenzo[κ]fluoranthene 220108-89-4,
 4-Bromo-7,12-dicyclohexylbenzo[κ]fluoranthene 220108-90-7,
 4-Bromo-7,12-di-n-octylbenzo[κ]fluoranthene 220108-91-8,
 4-Bromo-7,12-di-n-dodecylbenzo[κ]fluoranthene 220108-92-9,
 4-Bromo-7,12-diethyl-9,10-di-n-butylbenzo[κ]fluoranthene
 220108-93-0, 4-Bromo-7,12-diethyl-8-methylbenzo[κ]fluoranthene
 220108-94-1, 4-Bromo-7,12-diethyl-8,11-
 dimethylbenzo[κ]fluoranthene 220108-95-2,
 4-Bromo-7,8,9,10,11,12-hexa-n-propylbenzo[κ]fluoranthene
 220108-96-3, 4-Bromo-7,12-diethyl-9,10-
 tetramethylenebenzo[κ]fluoranthene 220108-97-4,
 4-Bromo-7,12-diphenyl-8,11-dimethoxybenzo[κ]fluoranthene
 220108-99-6, 4-Bromo-7,12-bis(4'-methylphenyl)-9,10-
 dimethoxybenzo[κ]fluoranthene 220109-00-2,
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 220109-02-4, 4-Bromo-7-phenyl-12-methylbenzo[κ]fluoranthene
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 220109-13-7, 4-Bromo-7,12-bis(4'-trifluoromethylphenyl)benzo[κ]fluoranthene 220109-15-9,
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 4-Bromo-7,12-bis(4'-n-

octyloxyphenyl)benzo[κ]fluoranthene 220109-19-3,
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4-Bromo-7,12-bis(4'-isopropylphenyl)-8,11-dimethylbenzo[κ]fluoranthene 220109-39-7,
4-Bromo-7,9,10,12-tetraphenylbenzo[κ]fluoranthene 220109-40-0, 4-Bromo-8,11-bis(4'-methylphenyl)benzo[κ]fluoranthene 220109-41-1, 4-Bromo-7,12-dimethyl-8,11-diphenylbenzo[κ]fluoranthene 220109-42-2,
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4-Bromo-7,12-bis(4'-methoxyphenyl)-8,11-bis(3"-methylphenyl)benzo[κ]fluoranthene 220109-46-6,
4-Bromo-7,12-dimethyl-8,9,10,11-tetraphenylbenzo[κ]fluoranthene 220109-47-7, 4-Bromo-7,8,9,10,11,12-hexaphenylbenzo[κ]fluoranthene 220109-48-8,
4-Bromo-7,12-bis(4'-methylphenyl)-8,11-diphenoxybenzo[κ]fluoranthene 220109-49-9,
4-Bromo-7,12-dicyanobenzo[κ]fluoranthene 220109-50-2
220109-52-4, 4-Bromo-7,12-diphenyl-8,11-bis(ethoxycarbonyl)benzo[κ]fluoranthene 220109-53-5,
4-Bromo-7,12-bis(ethoxycarbonyl)benzo[κ]fluoranthene 220109-54-6, 4-Bromo-7,12-bis(n-hexyloxycarbonyl)benzo[κ]fluoranthene 220109-55-7, 4-Bromo-7,12-bis(phenoxy carbonyl)benzo[κ]fluoranthene 220109-56-8,
4-Bromo-7,12-diphenyl-9,10-diformylbenzo[κ]fluoranthene 220109-57-9, 4-Bromo-7,12-diphenyl-9,10-bis(phenylcarbonyl)benzo[κ]fluoranthene 220109-58-0,
4-Bromo-7,12-diphenyl-8,11-bis(acetoxy)benzo[κ]fluoranthene 220109-59-1, 7,12-Bis(ethoxycarbonyl)benzo[κ]fluoranthene 220109-60-4 220109-61-5
(fluoranthene derivative for organic electroluminescent device)

L31 ANSWER 56 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:154641 HCAPLUS

DOCUMENT NUMBER: 126:164231

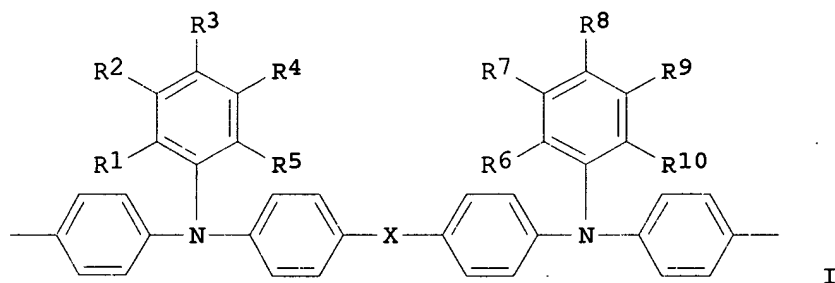
TITLE: Hole-transporting material and organic electroluminescent device and

electrophotographic photoreceptor using it
INVENTOR(S): Tamano, Michiko; Onikubo, Shunichi; Enokida,

PATENT ASSIGNEE(S): Toshio
 SOURCE: Toyo Ink Mfg Co, Japan
 Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: **Patent**
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 08314169	A2	19961129	JP 1995-121026	1995 0519
			<--	
JP 3640090	B2	20050420	JP 1995-121026	1995 0519
PRIORITY APPLN. INFO.:				

GI

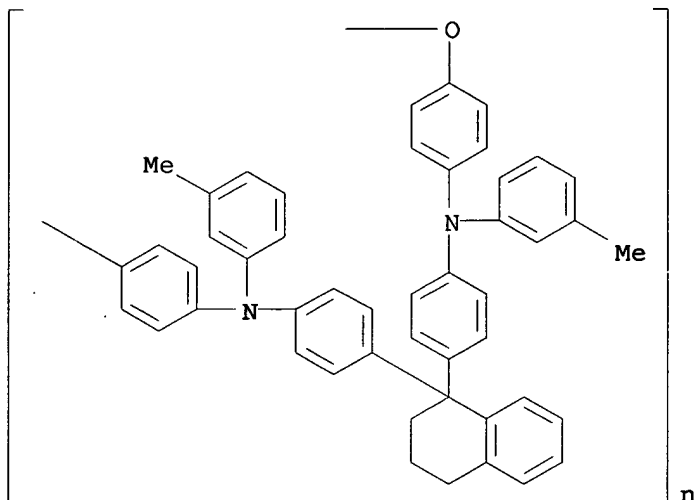


AB The title material has the general formula HA(BA)_nBAH [A = diamine derivative residue I; R1-10 = H, halo, (substituted) alkyl, (substituted) alkoxy, (substituted) thioalkoxy, CN, (mono- or di-substituted) amino, OH, SH, (substituted) aryloxy, (substituted) arylthio, (substituted) aromatic ring, (substituted) heterocyclic ring (these adjacent substituents may form aliphatic, aromatic or heterocyclic rings which may be substituted); X = O, S, Se; B = linking group CYZ; Y, Z = H, halo, (substituted) alkyl, (substituted) aromatic ring, (substituted) heterocyclic ring, Y and Z may form an aliphatic, aromatic or heterocyclic ring which may be substituted; n = 1-5000]. The electroluminescent **device**, comprising ≥ 1 organic compound thin film-made luminescent layers sandwiched between a pair of electrodes, contains the material in ≥ 1 of the layers. The photoreceptor contains a charge-generating material and the pos. hole-transporting material on a conductive support. The electroluminescent **device** shows high luminescent efficiency, brightness, and durability and the photoreceptor gives clear images in repeated use.

IT 186672-01-5
 (electrophotog. photoreceptor and electroluminescent **device** containing aromatic polyamine hole-transporting material)

RN 186672-01-5 HCAPLUS

CN Poly[oxy-1,4-phenylene[(3-methylphenyl)imino]-1,4-phenylene(3,4-dihydro-1(2H)-naphthalenylidene)-1,4-phenylene[(3-methylphenyl)imino]-1,4-phenylene] (9CI) (CA INDEX NAME)



IC ICM G03G005-06
ICS C07C211-54; C07C211-56; C07C217-90; C07C323-37
CC 74-3 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 73
ST hole transporting agent arom polyamine; electrophotog photoreceptor polyamine pos hole transporter; electroluminescent **device** polyamine pos hole transporter
IT Polyamines
(aromatic; electrophotog. photoreceptor and electroluminescent **device** containing aromatic polyamine hole-transporting material)
IT Electroluminescent **devices**
Electrophotographic photoconductors (photoreceptors)
(electrophotog. photoreceptor and electroluminescent **device** containing aromatic polyamine hole-transporting material)
IT 186671-99-8 186672-00-4 **186672-01-5** 186672-02-6
186672-03-7 **186672-04-8** 186672-05-9
186672-06-0 186672-07-1 186672-08-2 186672-09-3
186672-10-6 186811-51-8
(electrophotog. photoreceptor and **electroluminescent device** containing aromatic polyamine hole-transporting material)
IT 186671-98-7P
(electrophotog. photoreceptor and electroluminescent **device** containing aromatic polyamine hole-transporting material)

L31 ANSWER 57 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:612438 HCAPLUS

DOCUMENT NUMBER: 125:234385

TITLE: Positive hole-transporting material and usage thereof

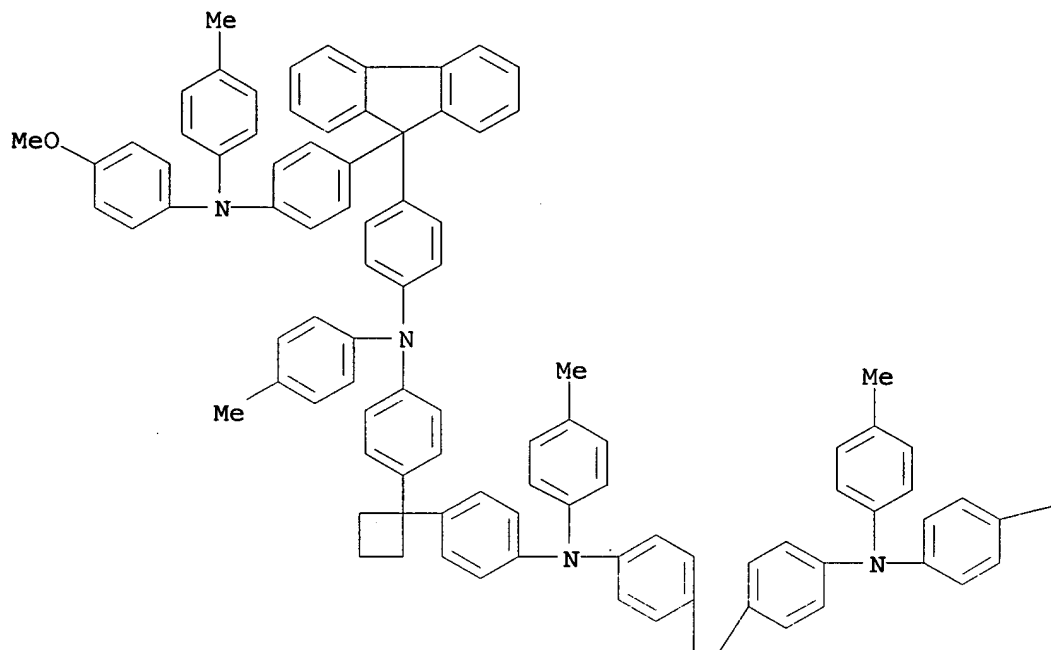
INVENTOR(S): Enokida, Toshio; Tamano, Michiko; Onikubo,

PATENT ASSIGNEE(S): Shunichi
 SOURCE: Toyo Ink Mfg Co, Japan
 Jpn. Kokai Tokkyo Koho, 16 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: **Patent**
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08179526	A2	19960712	JP 1994-319695	1994 1222
JP 3269300	B2	20020325	JP 1994-319695	1994 1222

GI For diagram(s), see printed CA Issue.
 AB The material has the general formula ABA [A = diamine derivative residue I ; R1-9= H, halo, (substituted) alkyl, (substituted) alkoxy, (substituted) thioalkoxy, cyano, (mono- or di-substituted) amino, OH, SH, (substituted) aryloxy, (substituted) arylthio, (substituted) aromatic ring, (substituted) heterocycle; ≥ 1 of each of R1-3, R4-6, and R7-9 is not H and the adjacent groups may form alicyclic, carbocyclic aromatic, or heterocyclic aromatic rings which may be substituted; X = divalent aromatic ring residue; B = alicyclic residue II ; Y = (substituted) alkyl; n = 2-7; m = 0-2n]. Organic electroluminescent **devices** comprising ≥ 1 organic compound thin film luminescent layers ≥ 1 of which contains the material, and electrophotog. photoreceptors containing a charge-generating agent and the material are also claimed. The material shows good pos. hole-transporting properties and high quality electroluminescent **devices** and photoreceptors are obtained by using it. Thus, III was used typically for the material, which was prepared by reacting cyclohexanone with 9,10-bis(4-butylphenylphenylamino)phenanthrene.
 IT 181796-90-7
 (pos. hole transporting agent for electrophotog. photoreceptor and **electroluminescent device**)
 RN 181796-90-7 HCAPLUS
 CN Benzenamine, 4,4'-cyclobutylidenebis[N-[4-[9-[4-[(4-methoxyphenyl)(4-methylphenyl)amino]phenyl]-9H-fluoren-9-yl]phenyl]-N-(4-methylphenyl)- (9CI) (CA INDEX NAME)

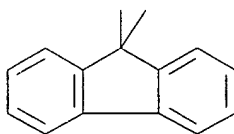
PAGE 1-A



PAGE 1-B

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PAGE 2-A



IC ICM G03G005-06
ICS G03G005-06
CC 74-3 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
Section cross-reference(s): 25, 76
ST electrophotog photoreceptor pos hole transporting agent;
electroluminescence **device** pos hole transporting agent
IT Electroluminescent **devices**
(electroluminescent **devices** containing pos. hole
transporting agent)
IT 181796-76-9 181796-77-0 181796-78-1 181796-79-2
181796-80-5 181796-81-6 181796-82-7 181796-84-9
181796-86-1 181796-88-3 **181796-90-7** 181796-92-9
181796-94-1 181796-96-3 181796-98-5 181796-99-6
181797-00-2 181797-01-3 181797-02-4
(pos. hole transporting agent for electrophotog. photoreceptor
and **electroluminescent device**)
IT 181796-74-7P 181796-75-8P
(pos. hole transporting agent for electrophotog. photoreceptor
and electroluminescent **device**)

L31: ANSWER 58 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:294601 HCAPLUS

DOCUMENT NUMBER: 124:328419

TITLE: Hole-transporting material for organic
electroluminescence **device** or
electrophotographic photoreceptor

INVENTOR(S): Tamano, Michiko; Onikubo, Toshikazu; Uemura,
Toshikyuki; Ogawa, Tadashi; Enokida, Toshio

PATENT ASSIGNEE(S): Toyo Ink Manufacturing Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 34 pp.

CODEN: EPXXDW

DOCUMENT TYPE: **Patent**

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 699654	A1	19960306	EP 1995-305450	1995 0804
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EP 699654	B1	19990331		
R: DE, FR, GB				
JP 08227165	A2	19960903	JP 1995-164912	1995 0630
			<--	
JP 3261930	B2	20020304		
JP 08100038	A2	19960416	JP 1995-171739	1995 0707
			<--	
JP 3296147	B2	20020624		
US 5681664	A	19971028	US 1995-510535	1995 0802

PRIORITY APPLN. INFO.:

<--
JP 1994-183198 A
1994
0804

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JP 1994-319694 A
1994
1222

AB A hole-transporting material of formula H-A-[-B-A-]_n-B-A-H has excellent hole-transporting capability and excellent durability, wherein A is a specified aromatic amine derivative residue, B is a residue, and n is an integer of 1-5000. The materials may be included in an organic EL device of an electrophotog. photoreceptor which are excellent in stability in continuous long-term use.

IT 176443-56-4
(hole-transporting material for EL device
or electrophotog. photoreceptor)

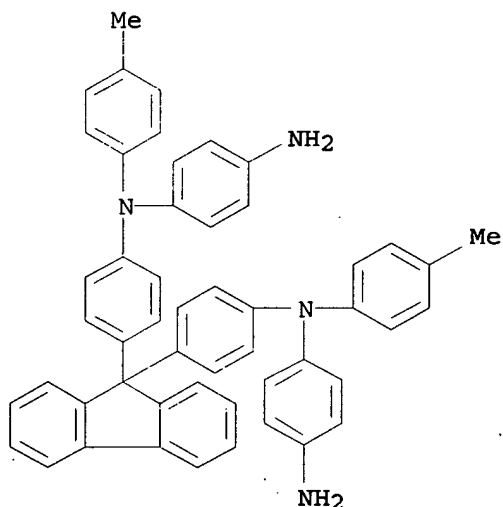
RN 176443-56-4 HCAPLUS

CN Cyclohexanone, polymer with N,N'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis[N-(4-methylphenyl)-1,4-benzenediamine] (9CI) (CA INDEX NAME)

CM 1

CRN 176443-55-3

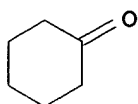
CMF C51 H42 N4



CM 2

CRN 108-94-1

CMF C6 H10 O



IC ICM C07C211-54
ICS C07C217-92; C07C323-36; C07C323-37; C07D211-26; C07D309-14;
C07D335-02; C08G075-02; G03G005-06; G03G005-07

CC 74-3 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)

ST hole transporting material **EL device**; electrophotog
photoreceptor hole transporting material

IT Electroluminescent **devices**

Electrophotographic photoconductors and photoreceptors
(hole transporting material for)

IT 176443-14-4 176443-25-7 176443-27-9 176443-29-1
176443-31-5 176443-32-6 176443-34-8 176443-36-0
176443-38-2 176443-40-6 176443-42-8 176443-43-9
176443-45-1 176443-46-2 176443-47-3 176443-48-4
176443-50-8 176443-51-9 176443-53-1 176443-54-2
176443-56-4 176443-57-5 176443-59-7
176443-60-0 176443-62-2 176443-64-4 176443-66-6
176443-68-8 176443-70-2 176443-72-4 176443-73-5
176443-75-7 176443-77-9 176443-79-1 176443-81-5
176443-83-7

(hole-transporting material for **EL device**
or electrophotog. photoreceptor)

IT 176443-14-4P 176443-15-5P 176443-16-6P 176443-18-8P
176443-19-9P 176443-21-3P

(prepared as hole-transporting material for **EL device**
or electrophotog. photoreceptor)

IT 108-94-1, Cyclohexanone, reactions 603-34-9, Triphenylamine
4316-51-2, 4-Methoxytriphenylamine 4316-53-4,
4-Methyltriphenylamine 176443-22-4 176443-23-5

(preparation of hole-transporting material for **EL device**
or electrophotog. photoreceptor)

L31 ANSWER 59 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995:769803 HCAPLUS

DOCUMENT NUMBER: 123:183664

TITLE: Amine compound and electro-luminescence
device comprising same.

INVENTOR(S): Tomiyama, Hiromitsu; Oshino, Masahiko;
Nakanishi, Naoko; Suzuki, Mutsumi; Fukuyama,
Masao; Murakami, Mutsuaki; Nambu, Taro

PATENT ASSIGNEE(S): Hodogaya Chemical Co., Ltd., Japan; Matsushita
Electric Industrial Co., Ltd.

SOURCE: Eur. Pat. Appl., 98 pp.

CODEN: EPXXDW

DOCUMENT TYPE: **Patent**

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

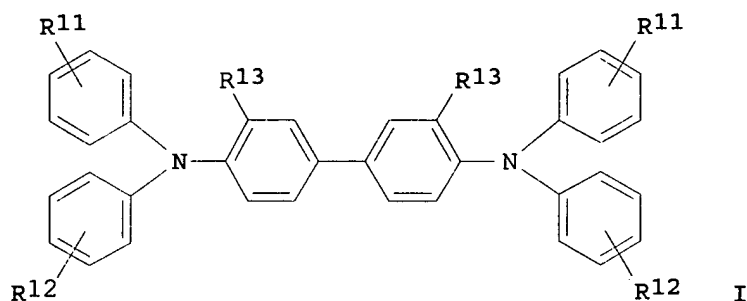
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 650955	A1	19950503	EP 1994-117206	

					1994 1031
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EP 650955	B1	19980819			
R: DE, FR, GB					
JP 07126615	A2	19950516	JP 1993-273883		1993 1101
			<--		
JP 3194657	B2	20010730			
JP 07126225	A2	19950516	JP 1993-293800		1993 1101
			<--		
JP 3574860	B2	20041006			
JP 07126226	A2	19950516	JP 1993-293801		1993 1101
			<--		
JP 3220950	B2	20011022			
JP 2001273978	A2	20011005	JP 2001-49489		1993 1101
			<--		
JP 3529735	B2	20040524			
JP 07331238	A2	19951219	JP 1994-132744		1994 0615
			<--		
JP 08003122	A2	19960109	JP 1994-155470		1994 0615
			<--		
JP 2002343577	A2	20021129	JP 2002-83871		1994 0615
			<--		
JP 08100172	A2	19960416	JP 1994-236622		1994 0930
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JP 3274939	B2	20020415			
JP 2001181240	A2	20010703	JP 2000-332663		2000 1031
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JP 3567323	B2	20040922			
JP 2004182740	A2	20040702	JP 2004-21884		2004 0129
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PRIORITY APPLN. INFO.:			JP 1993-273883	A	1993 1101
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			JP 1993-293800	A	1993 1101
			<--		
			JP 1993-293801	A	

1993
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JP 1994-132744 A 1994
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JP 1994-155470 A 1994
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JP 1994-236622 A 1994
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JP 2001-49489 A3 1993
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OTHER SOURCE(S) : MARPAT 123:183664
GI



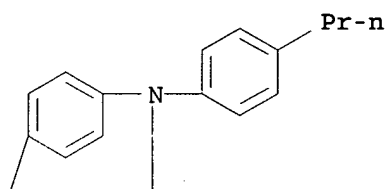
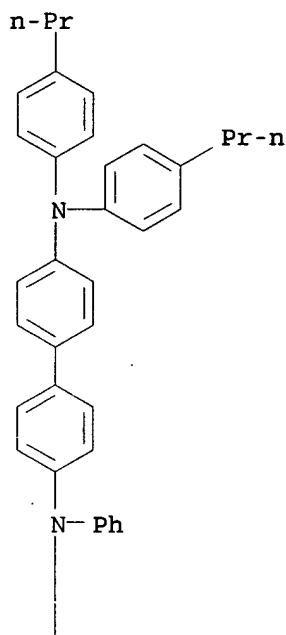
AB Novel amine compds. useful as electron-transporting materials to be incorporated in organic electro-luminescence (EL) **devices** are described, e.g., having the formula I [R1, R2 = H, alkyl, alkoxy, Ph, alkylphenyl, alkoxyphenyl, with the proviso that ≥ 1 of R1 and R2 is n-Bu, i-Bu, sec-Bu, tert-Bu, Ph, alkoxyphenyl, alkylphenyl; R3 = H, alkyl, alkoxy, Cl]. Five more Markush structures are given. The organic EL **device** can find wide application in various display units, requires a low applied voltage and exhibits a high luminance and an excellent stability.

IT 167218-63-5
(amine compound as electron-transporting material for **electroluminescent devices**)

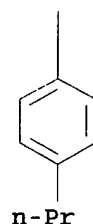
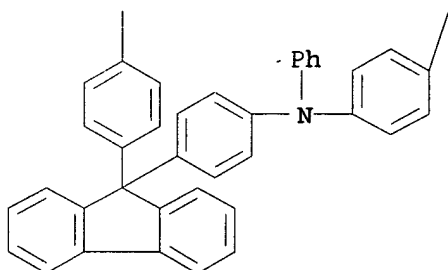
RN 167218-63-5 HCAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis[N-phenyl-N',N'-bis(4-propylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM C07C211-54
 ICS C07C211-55; C07C211-56; C07C217-92; C09K011-06; H05B033-14
 CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
 Section cross-reference(s): 25
 ST amine electroluminescence **device** electron transporting
 material
 IT Electroluminescent **devices**
 (amine compound as electron-transporting material)
 IT 134008-76-7 164724-35-0 167218-54-4 167218-55-5
 167218-56-6 167218-57-7 167218-58-8 167218-59-9
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 167218-64-6 167218-65-7 167218-66-8 167218-67-9
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 167218-72-6 167218-73-7 167218-74-8 167218-75-9
 167218-76-0 167218-77-1 167218-78-2 **167218-79-3**

167218-80-6 167218-81-7 167218-82-8 167218-83-9
167218-84-0 167218-85-1 167218-86-2 167218-87-3
167218-88-4 167218-89-5 167218-90-8 167218-91-9
167218-92-0 167218-93-1 167218-94-2 167218-95-3
167218-96-4 167218-97-5 167218-98-6 167218-99-7
167219-00-3 167219-01-4

(amine compound as electron-transporting material for
electroluminescent devices)

IT 79183-76-9P 128396-99-6P 167218-41-9P 167218-42-0P
167218-43-1P 167218-44-2P 167218-45-3P 167218-46-4P
167218-47-5P 167218-48-6P 167218-49-7P 167218-50-0P
167218-51-1P 167218-52-2P 167218-53-3P

(amine compound as electron-transporting material for
electroluminescent devices)

IT 3070-86-8P 3663-20-5P 4496-49-5P 4627-22-9P 20330-45-4P
20331-32-2P 78888-05-8P 167218-28-2P 167218-29-3P
167218-30-6P 167218-31-7P 167218-32-8P 167218-33-9P
167218-34-0P 167218-35-1P 167218-36-2P 167218-37-3P
167218-38-4P 167218-39-5P 167218-40-8P

(amine compound as electron-transporting material for
electroluminescent devices)

L31 ANSWER 60 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995:27978 HCAPLUS

DOCUMENT NUMBER: 122:20301

TITLE: Luminescent properties of organic thin film EL
devices

AUTHOR(S): Watanabe, Masaru; Kusabiraki, Minoru; Abe,
Kyou; Aozasa, Masao

CORPORATE SOURCE: Dep. Electr. Eng., Osaka City Univ., Osaka,
Japan

SOURCE: Memoirs of the Faculty of Engineering, Osaka
City University (1993), 34, 17-24

CODEN: MFEOAR; ISSN: 0078-6659

DOCUMENT TYPE: Journal

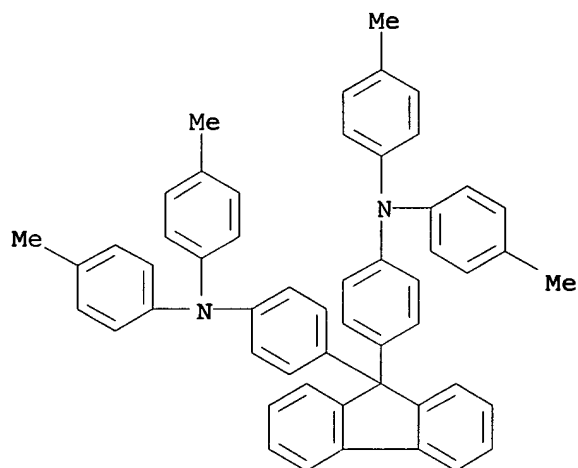
LANGUAGE: English

AB Organic thin film EL **devices** reported by C. W. Tang et. al
(1989) had a very high luminance greater than 1000 cd/m², a low
driving voltage as low as 10 V, and a high luminous efficiency
about 1.5 lm/W. We synthesized the organic materials used by them
and the thin films were prepared by the vacuum evaporation method. The
film quality and the characteristics of organic EL **devices**
were examined. In addition, the effects of the hole transport layer on
the EL **devices** were examined

IT 159526-57-5
(luminescent properties of organic thin film
electroluminescent devices)

RN 159526-57-5 HCAPLUS

CN Benzenamine, 4,4'-(9H-fluoren-9-ylidene)bis[N,N-bis(4-
methylphenyl)- (9CI) (CA INDEX NAME)



CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
 Section cross-reference(s): 73
 ST org thin film electroluminescent **device**
 IT Electric conductivity and conduction
 Electroluminescent **devices**
 Infrared spectra
 Luminescence
 Ultraviolet and visible spectra
 (luminescent properties of organic thin film electroluminescent
devices)
 IT 2085-33-8, Tris(8-quinolinolato)aluminum 58473-78-2,
 1,1-Bis(4-di-p-tolylaminophenyl)cyclohexane 140165-52-2
 159526-57-5
 (luminescent properties of **organic** thin film
 electroluminescent **devices**)

L31 ANSWER 61 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1994:496254 HCAPLUS
 DOCUMENT NUMBER: 121:96254
 TITLE: Organic electroluminescence **device**
 INVENTOR(S): Suzuki, Shinichi; Shibata, Toyoko; Takeuchi,
 Shigeki
 PATENT ASSIGNEE(S): Konishiroku Photo Ind, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 28 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: **Patent**
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06017046	A2	19940125	JP 1992-173177	1992 0630

PRIORITY APPLN. INFO.:

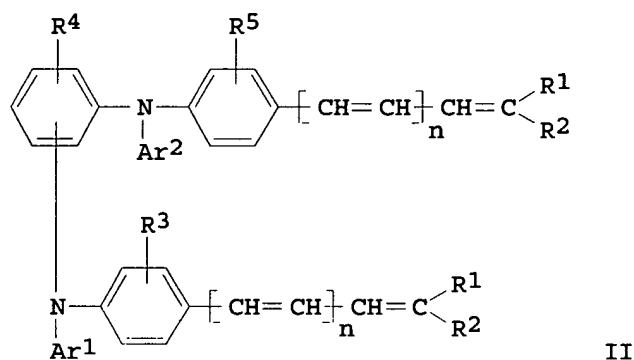
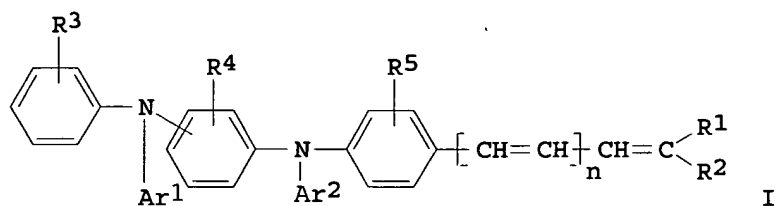
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 JP 1992-173177

1992

0630

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AB The title **device**, suited for use as a flat-panel display or a plane light source, comprises ≥ 1 layer containing I or II [R1, R3 = H, (substituted) alkyl, aryl, aralkyl, heterocyclyl, provided that R1 and R2 may not both be H, and R1 and R2 may together form a ring; R3, R4, R5 = H, halo, alkyl, alkoxy; Ar1, Ar2 = (substituted) alkyl, aryl, aralkyl; n = 0, 1].

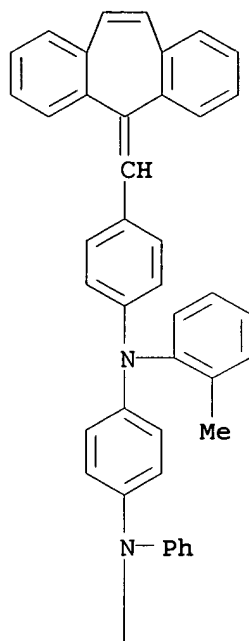
IT 131312-29-3

(electroluminescent device from)

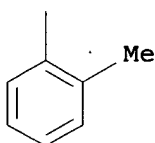
RN 131312-29-3 HCAPLUS

CN 1,4-Benzenediamine, N-[4-(5H-dibenzo[a,d]cyclohepten-5-ylidenemethyl)phenyl]-N,N'-bis(2-methylphenyl)-N'-phenyl- (9CI)
(CA INDEX NAME)

PAGE 1-A



PAGE 2-A

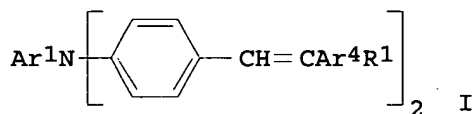


IC ICM C09K011-06
ICS H05B033-14
CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
ST org electroluminescence **device**
IT Electroluminescent **devices**
(organic, for display and light source)
IT 131312-28-2 **131312-29-3** 131312-31-7 131333-32-9
131660-34-9 131660-38-3 156204-52-3 156204-53-4
156204-54-5 **156204-55-6** 156204-56-7 156204-57-8
156204-58-9 156204-59-0 156204-60-3 156204-61-4
156204-62-5 156204-63-6 156204-64-7
156204-65-8 156204-66-9 156204-67-0
(electroluminescent **device** from)

L31 ANSWER 62 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1994:311873 HCAPLUS
DOCUMENT NUMBER: 120:311873
TITLE: Organic electroluminescent **devices**
INVENTOR(S): Takeuchi, Shigeki; Shibata, Toyoko; Suzuki,

PATENT ASSIGNEE(S): Shinichi
 SOURCE: Konishiroku Photo Ind, Japan
 Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05320632	A2	19931203	JP 1992-127455	1992 0520
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PRIORITY APPLN. INFO.:			JP 1992-127455	1992 0520
			<--	
OTHER SOURCE(S):		MARPAT 120:311873		
GI				

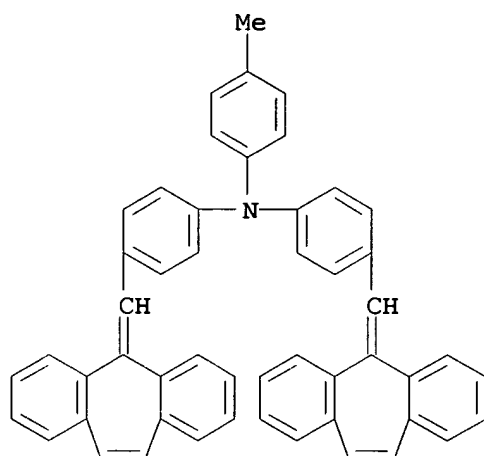


AB The **devices** contain distyryl compds.
 Ar⁴R¹C:CHAr²NAr¹Ar³CH:CAr⁵R² [Ar¹ = (substituted) alkyl,
 (substituted) alalkyl, (substituted) aryl; Ar²-3= (substituted)
 arylene; Ar⁴-5 = (substituted) aryl, (substituted) heterocyclic;
 R¹-2 = H, (substituted) alkyl, (substituted) alalkyl, (substituted)
 aryl; Ar⁴ and R¹ and Ar⁵ and R² may form a ring]. The
devices contain distyryl compds. I .

IT 139606-13-6
 (organic electroluminescent devices containing)

RN 139606-13-6 HCAPLUS

CN Benzenamine, N,N-bis[4-(5H-dibenzo[a,d]cyclohepten-5-ylidenemethyl)phenyl]-4-methyl- (9CI) (CA INDEX NAME)



IC ICM C09K011-06
ICS H05B033-14.
CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
ST electroluminescent **device** org distyryl display
IT Electroluminescent **devices**
(organic, distyryl derivs. for)
IT 100803-22-3 100803-34-7 100803-43-8 100803-48-3
100803-50-7 137388-11-5 **139606-13-6**
154925-88-9 154925-89-0
(organic **electroluminescent devices** containing)

L31 ANSWER 63 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:244745 HCAPLUS

DOCUMENT NUMBER: 118:244745

TITLE: Electroluminescent **device** using
pyrene derivative

INVENTOR(S): Oonuma, Teruyuki; Sasaki, Masaomi; Oota,
Masabumi; Sakon, Hirota; Takahashi, Toshihiko;
Yamaguchi, Takehito; Ariga, Tamotsu; Shimada,
Tomoyuki; Adachi, Hiroshi

PATENT ASSIGNEE(S): Ricoh Kk, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DOCUMENT TYPE: **Patent**

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04348183	A2	19921203	JP 1991-166462	1991 0611

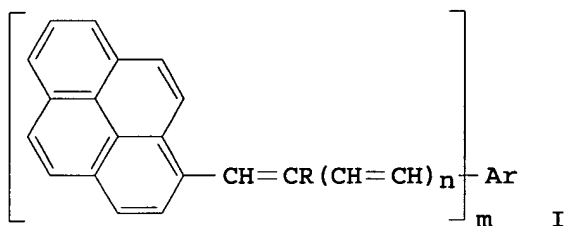
PRIORITY APPLN. INFO.:

JP 1990-305406

A1

1990
1110

OTHER SOURCE(S): MARPAT 118:244745
GI

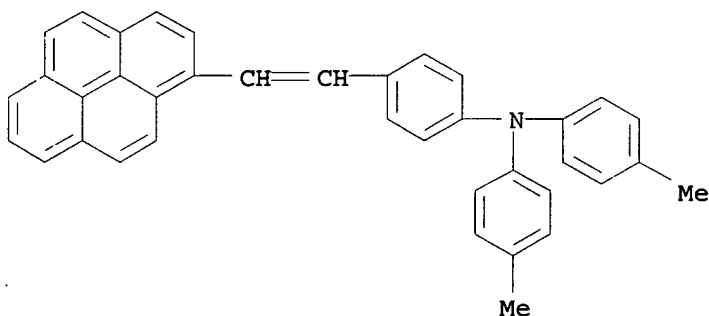


AB The title **device** comprises ≥ 1 organic layer containing a pyrene derivative I [Ar = aromatic hydrocarbyl; R = H, (substituted) alkyl, aryl; n = 0, 1; m = 1, 2; Ar and R may form a ring at n = 0 and m = 1], which is sandwiched by a cathode and an anode.

IT 127697-08-9
(**electroluminescent devices** containing)

RN 127697-08-9 HCAPLUS

CN Benzenamine, N,N-bis(4-methylphenyl)-4-[2-(1-pyrenyl)ethenyl]-
(9CI) (CA INDEX NAME)



IC ICM C09K011-06
ICS C09K011-00; H05B033-14
CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
Section cross-reference(s): 25, 73
ST electroluminescent **device** pyrene deriv; vapor deposition
pyrene electroluminescent **device**
IT Electroluminescent **devices**
(containing pyrene derivs.)
IT 15082-28-7 15374-27-3 58473-78-2 127697-08-9
127697-16-9 137791-28-7 147598-26-3
147598-27-4 147598-28-5 147598-29-6
(**electroluminescent devices** containing)

L31 ANSWER 64 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:70270 HCAPLUS

DOCUMENT NUMBER: 118:70270

TITLE: Electroluminescent **device** containing aromatic compound

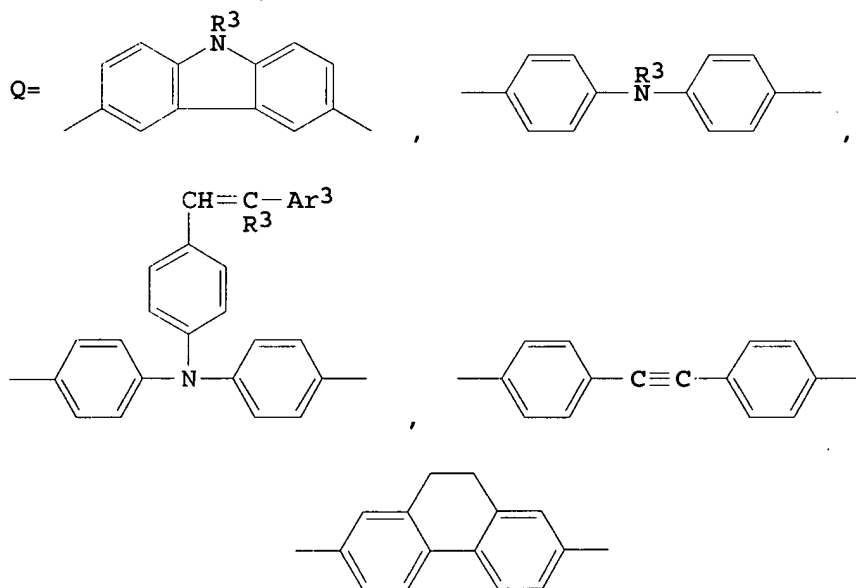
INVENTOR(S): Takahashi, Toshihiko; Ota, Masabumi; Onuma, Teruyuki; Kawamura, Fumio; Sakon, Hirota

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04184892	A2	19920701	JP 1990-314840	1990 1120
JP 2913116	B2	19990628	JP 1990-314840	1990 1120

PRIORITY APPLN. INFO.: <--

GI <--

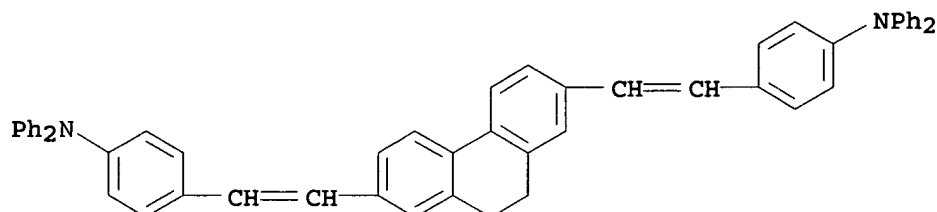


AB Th title **devices** comprises ≥ 1 layer containing an organic compound $Ar1R1C:CHXCH:CR2Ar2$ [$X = Q$; $Ar1-3 =$ (substituted) carbocyclic aromatic ring and/or (substituted) heterocyclic aromatic ring; $R1-3 = H$, (substituted) alkyl, (substituted) carbocyclic aromatic ring, (substituted) heterocyclic aromatic ring] sandwiched between an anode and a cathode.

IT 145588-00-7
 (field-effect **electroluminescent** substance)

RN 145588-00-7 HCAPLUS

CN Benzenamine, 4,4'-[(9,10-dihydro-2,7-phenanthrenediyl)di-2,1-ethenediyl]bis[N,N-diphenyl- (9CI) (CA INDEX NAME)

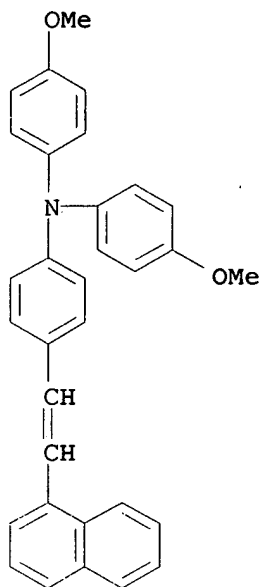


IC ICM H05B033-14
 CC 74-13 (Radiation Chemistry, **Photochemistry**, and **Photographic** and Other Reprographic Processes)
 Section cross-reference(s): 73
 ST field effect electroluminescent **device**; org compd layer
 electroluminescent **device**
 IT Electroluminescent **devices**
 (organic compds. in electron-transporting and hole-transporting layer for)
 IT 23798-85-8 23833-43-4 23833-44-5 23833-46-7 23833-47-8
 23833-49-0 23833-50-3 78932-84-0 78932-85-1 118959-97-0
 121592-32-3 122112-53-2 124906-64-5 145587-93-5
 145587-94-6 145587-95-7 145587-96-8 145587-97-9
 145587-98-0 145587-99-1 **145588-00-7** 145588-01-8
 145588-02-9 145588-03-0 145588-04-1 145588-05-2
 145588-06-3 145588-07-4 145588-08-5 145588-09-6
 145609-39-8
 (field-effect **electroluminescent** substance)

L31 ANSWER 65 OF 65 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1992:601724 HCAPLUS
 DOCUMENT NUMBER: 117:201724
 TITLE: Organic thin films for electroluminescence displays
 AUTHOR(S): Tsutsui, Tetsuo; Saito, Shogo
 CORPORATE SOURCE: Grad. Sch. Eng. Sci., Kyushu Univ., Kasuga, 816, Japan
 SOURCE: Polym. Microelectron. Proc. Int. Symp. (1990), Meeting Date 1989, 591-600. Editor(s): Tabata, Yoneho. Kodansha: Tokyo, Japan.
 CODEN: 57NMAB
 DOCUMENT TYPE: Conference
 LANGUAGE: English

AB High performance electroluminescent **devices** which consisted of organic thin multilayer films were described. First, the selection of appropriate organic materials for carrier transporting layers and organic fluorescent dyes were described. Then, the roles of a hole transport layer, an electron transport layer, and an emitter layer were discussed. The fabrication of a blue light emitting electroluminescent **device** was also mentioned. Finally, the performance and promising applications of organic thin film electroluminescent **devices** were discussed.
 IT **91175-19-8**
 (electroluminescent cell with light emitting dye of, hole transporting tendency of)
 RN 91175-19-8 HCAPLUS
 CN Benzenamine, N,N-bis(4-methoxyphenyl)-4-[2-(1-

naphthalenyl)ethenyl]- (9CI) (CA INDEX NAME)



- CC 74-13 (Radiation Chemistry, **Photochemistry**, and
Photographic and Other Reprographic Processes)
ST electroluminescent display **device** org thin film; org
fluorescent dye electroluminescent display **device**
IT Electroluminescent **devices**
(organic thin multilayer films for, selection of carrier transport
layer and fluorescent dye in)
IT 91175-19-8
(electroluminescent cell with light
emitting dye of, hole transporting tendency of)